SOUTHEASTERN BIOLOGY

Volume 55 October, 2008 Number 4

QH301
.A78
v. 55
no. 4
Oct 2008

ONLY CALL FOR PAPERS FOR THE 70TH MEETING

ABSTRACT SUBMISSION—SEE PAGE 462

W. Michael Dennis, ASB Past President, presents his address on page 443.

The Official Publication of
The Association of Southeastern Biologists
http://www.asb.appstate.edu/

SOUTHEASTERN BIOLOGY

(ISSN 1533-8436)

SOUTHEASTERN BIOLOGY (ISSN 1533-8436) is published quarterly in January, April, July, and October by the Association of Southeastern Biologists, Inc., Carolina Biological Supply Co., 2700 York Road, Burlington, NC 27215. Periodicals postage paid at Burlington, NC, and additional mailing offices. POSTMASTER: please send address changes to the SOUTHEASTERN BIOLOGY business manager, Tim Atkinson, Carolina Biological Supply Co., 2700 York Road, Burlington, NC 27215. ASB members receive the SOUTHEASTERN BIOLOGY as part of their membership dues. For non-members, the cost is $10.00 per issue.

All contributions, inquiries about missing numbers and other matters should be addressed to the Print Editor. News items should be sent to the News Editor. Send books to be reviewed to the Book Review Editor. Printed by Allen Press, 810 East 10th Street, Lawrence, KS 66044.

Print Editor..... James D. Caponetti, Division of Biology, University of Tennessee, Knoxville, TN 37996-0830; (865) 974-6841; FAX (865) 974-4057; jcaponet@utk.edu.

Associate Editor ..... Nicole T. Welch, Dept. Sciences & Math., Mississippi Univ. for Women, 1100 College St., MUW-100, Columbus, MS 39701; (662) 329-7243; FAX (662) 329-7238; nwelch@as.muw.edu.

Web Editor..... Dennis C. Haney, Department of Biology, Furman University, Greenville, SC 29613-0418; (864) 294-2050; FAX (864) 294-2058; dennis.haney@furman.edu.

Business Manager..... Tim Atkinson, Carolina Biological Supply Co., 2700 York Road, Burlington, NC 27215; (336) 538-6224; tim.atkinson@carolina.com.

News Editor ..... Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA 71209; (318) 342-1797; FAX (318) 342-3312; fiorillo@ulm.edu.

Book Review Editor .... Debbie Moore, Department of Natural Sciences, Troy University, P.O. Box 8368, Dothan, AL 36304-8368; (334) 983-6556, ext. 250; FAX (334) 983-6322; dsmoore@troy.edu.

Meetings Coordinator . Scott Jewell, P.O. Box 1088, Mebane, NC 27302; Office (336) 421-0034; FAX (336) 421-3425; Cell (336) 213-7373; a2zconvention@yahoo.com.

ASB Officers

President ..... Thomas R. Wentworth, Department of Plant Biology, Box 7612, North Carolina State University, Raleigh, NC 27695-7612; (919) 515-2168; FAX (919) 515-3436; tom_wentworth@ncsu.edu.

President-Elect..... Patricia B. Cox, Tennessee Valley Authority, 400 West Summit Hill Drive-WT11C, Knoxville, TN 37902; (865) 632-3609; FAX (865) 632-4223; pbcox@tva.gov.

Vice President ..... Elaine J. Davis, Department of Natural Sciences, Bowie State University, 14000 Jericho Park Road, Bowie, MD 20715; (301) 860-3876; edavis@bowiestate.edu.

Past President..... W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W. Canton Ave., Winter Park, FL 32789; (407) 677-1882; FAX (407) 657-7008; Toll Free (800) 304-1882; mike@bda-inc.com.

Secretary ..... Nicole T. Welch, Dept. Sciences & Math., Mississippi Univ. for Women, 1100 College St., MUW-100, Columbus, MS 39701; (662) 329-7243; FAX (662) 329-7238; nwelch@as.muw.edu.

Treasurer..... Tim Atkinson, Carolina Biological Supply Co., 2700 York Road, Burlington, NC 27215; (336) 538-6224; tim.atkinson@carolina.com.

Membership Officer .... Terry D. Richardson, Department of Biology, Box 5048, University of North Alabama, Florence, AL 35632; (256) 765-4429; Cell (256) 443-9165; FAX (256) 765-4430; tdrichardson@una.edu.

Database Manager..... Deborah Atkinson, Office of Continuing Education, School of Public Health, University of North Carolina, CB#8165, 400 Roberson Street, Chapel Hill, NC 27599-8165; (919) 843-6892; FAX (919) 966-5692; datkinso@email.unc.edu.

Archivist..... John Herr, Dept. of Biological Sciences, University of South Carolina, Columbia, SC 29208; (803) 777-8110; FAX (803) 777-4002; herr@biol.sc.edu.

Executive Committee Members-at-Large

2009: Donald H. Roush, Department of Biology, University of North Alabama, P. O. Box 5181, Florence, AL 35632; (256) 765-4435; FAX (256) 765-4430; dhroush@una.edu.

Robert Wayne Van Devender, Department of Biology, Appalachian State University, 572 Rivers Street, Boone, NC 28608; (828) 262-6907; FAX (828) 262-2127; vandevenderr@appstate.edu.

2010: Cathryn H. Greenberg, USDA Forest Service, 1577 Brevard Road, Asheville, NC 28806; (828) 667-5261, ext. 118; FAX (828) 667-9097; kgreenberg@fs.fed.us.

Douglas A. Rayner, Department of Biology, Wofford College, Spartanburg, SC 29303; (864) 597-4624; raynerda@wofford.edu.

2011: Ronald V. Dimock, Jr., Department of Biology, Wake Forest University, Winston-Salem, NC 27109; (336) 758-5567; FAX (336) 758-6008; dimock@wfu.edu.

Randall L. Small, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN 37996-1610; (865) 974-6207; FAX (865) 974-3067; rsmall@utk.edu.

Purpose

The purpose of this association shall be to promote the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. The ASB has representation in Section G Committee of the AAAS. Varying types of membership are available to individuals and institutions. See inside back cover.

Time and Place of Future Meetings

2009 April 1-4: Co-hosted by Jacksonville State University, Jacksonville, Alabama, and University of Alabama, Birmingham, Alabama. Meeting site is the Sheraton Birmingham Hotel, Birmingham, Alabama.

2010 April 7-10: Hosted by Western Carolina University, Cullowhee, North Carolina. Meeting site is the Crown Plaza Hotel, Asheville, North Carolina.

THE VIEW FROM HERE

A MESSAGE FROM THE PRESIDENT
THOMAS R. WENTWORTH

The 2008 Annual Meeting of the Association of Southeastern Biologists was drawing to a close as the Friday evening awards banquet concluded at the Marriott at Renaissance Park in Spartanburg, South Carolina. At one of the best-attended banquets in recent memory, much of the evening had been dedicated to a very special group of individuals, including award-winners and those who had served our organization in a variety of ways. The last event of the evening was recognition of our outgoing President, Michael Dennis, and the passing of the ASB gavel to me as incoming President (pictured above). As the banquet concluded and the crowd dispersed, I began thinking that we had failed to make special mention of one last group of very important persons. This group included most of those attending the banquet. Members of this group had not won awards, not served as elected officers, not served on committees, nor done anything else that merited mention in the banquet program. Yet, I thought, it was this very group that should have been given special recognition in our annual meeting's closing event. This group included people who traveled long distances and went to considerable expense to attend the meeting, paying their registration fees and patronizing our host hotel. They prepared and presented posters and papers, then attended many others presented by their colleagues. They helped organize and attended the plenary session, workshops, and symposia, participated in special breakfasts and luncheons, visited exhibits by our Patrons, exhibitors, and vendors, celebrated on Thursday night, went on field trips, and, yes, even attended the awards banquet. It is the active participation of this group of individuals in our annual meetings that helps make ASB the vibrant organization that it is. So, without further delay, I offer this special recognition of all the undergraduate and graduate students, college and university faculty, representatives of public and private agencies, retirees, and other biologists who attend our annual meetings. ASB exists for and because of you, and I open this "View from Here" by thanking you for what you contribute to this fine organization. I do intend to formally recognize you at next year's awards banquet in Birmingham, Alabama!

I also wish to emphasize in this message the importance of those who serve ASB in specific roles: the folks who run for and serve as elected officers, who fill other roles as appointees of the Executive Committee, or who chair or serve on ASB's many committees, over 50 people in all. Being President of ASB gives me a unique perspective on the critically important role that each of these individuals plays in the functioning of our organization; the enthusiasm and willingness with which each has stepped up to serve ASB is most gratifying. Several individuals

approached me at our recent annual meeting and volunteered to serve in various capacities, and I have contacted many others to request their service. Nearly all of these people have agreed to serve our organization. "I am honored to serve in this capacity," is a reply that is music to a president's ears, and I have heard this reply several times in the past few months. I am truly humbled to lead an organization that elicits such selfless dedication from its members and most appreciative of all who serve in so many ways. Without your dedicated service, we could not possibly do the important work we have undertaken.

I'll close my column with a couple of thoughts related to our 70th Annual Meeting next year in Birmingham, Alabama. First, I wish to remind our membership that ASB plays a special role among scientific organizations in encompassing all of biology. Most biological organizations focus on a particular group of organisms, on a particular level of biological organization, or on a particular process. ASB, in contrast, represents the full spectrum of biological subdisciplines. By encouraging participation by all biologists in the southeastern US and beyond, we can offer at each of our annual meetings a rich banquet at which one can enhance depth in an area of specialization while building breadth in many other areas. It is this diversity that makes ASB a unique and powerful force among biological organizations, and all ASB members should try to expand our diversity by encouraging their biologically-minded colleagues to join and support this unique organization.

Finally, I wish to announce a special theme for our upcoming annual meeting in Birmingham, Alabama: Charles Darwin and his theory of evolution by natural selection. Organic evolution is arguably the central theme of biology, and it is certainly one that distinguishes biology from the other sciences. The great geneticist, Theodosius Dobzhansky, once said, "Nothing in biology makes sense except in the light of evolution." But why did I select Darwin and evolution as the theme of our 2009 Annual Meeting? As most of you already know, 2009 is a year of two significant Darwin anniversaries: the 200th anniversary of his birth on February 12, 1809, and the 150th anniversary of his publication of "On the Origin of Species by Means of Natural Selection" in 1859. I conclude this column by declaring 2008-2009 as ASB's "Year of Darwin" and by looking forward to a meeting in Birmingham that celebrates Charles Darwin and his theory of evolution by natural selection. I hope that our 70th Annual Meeting will feature a special symposium and an educational workshop reflecting this theme, but other possibilities surely exist. If you have an idea of how we might further this theme in Birmingham next April, please contact me with your thoughts and your enthusiastic support!

Pictured right: The new President Thomas R. Wentworth in the field. ☙

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS
2008 Annual Meeting

AIBS Representative Report

Rita Colwell opened the 58th Annual AIBS Meeting, held in collaboration with BSCS, NABT, and NCSE, by challenging registrants to become actively engaged in all aspects of the theme, "Climate, Environment, and Infectious Diseases". The lectures, given at various sessions by the distinguished speakers on May 12 and 13, are available online in the AIBS Media Library.

AIBS continued its outstanding record of encouraging broad participation in the biological sciences by recognizing the following individuals: Distinguished Scientist Award - Terry Yates [posthumously], President's Citation Award - Ira Flatow, Education Award - Eric Klopfer, Outstanding Service Award - David Blockstein, and the Media Award - Michelle Nijhuis. Scholarly achievement was also highlighted during a luncheon with Diversity Scholar Awards given to Timothy Baldwin, Ph.D. candidate, Alabama A and M University and Lauren McGhee, MS student at the Ohio State University. The first Leadership Awards recognized the SEEDS program of ESA. Winners of the Student Poster Competition were Stacey Gorski et al., University of the Sciences, Philadelphia, and Anna Stewart, et al., SUNY EST. The Education Committee also paid tribute to the DIBS group for its promotion of diversity in biological research, education, and career development in the Metropolitan Washington Area High Schools.

The various AIBS services/programs gave reports indicative of impressive operational interactions. AIBS continues to actively participate in evolution initiatives, NEON, Public Policy, and SPARS. Additionally, an announcement was made of a new NSF track in the Research Coordination Network aimed at undergraduate biology education. For additional information: http://www.nsf.gov/pub/22008/nsf08035/nsf08035.jsp.

The AIBS Council meeting followed on 14 May 2008 with representatives of BioOne, Encyclopedia of Life, Public Policy, NSF, and COPUS providing stimulating presentations. A new NABT Bioclub has been formed to recruit, support, and nurture students in the biological sciences. NESCent is instituting *Evolution Across the Curriculum* as a means of integrating evolutionary principles at all levels of the curriculum rather than in a single course.

Rita Colwell encouraged participating societies to maintain active support and participation in all aspects of AIBS activities.

Seventy-seven participants representing 44 different societies attended the AIBS Education Summit that followed the Council Meeting. The challenges and programs of contemporary biological education were addressed. Collective participation was encouraged in an effort to address strategies and possible initiatives towards a more comprehensive agenda for the biological education community.

Stay tuned for the announcement of the 2009 AIBS Annual Meeting–May 18-19.

Respectfully submitted,
Geraldine W. Twitty
AIBS Representative

Events of the 2008 Annual Meeting in Spartanburg, South Carolina Hosted by Furman University, Greenville, South Carolina, and Wofford College, Spartanburg, South Carolina

ASB Meritorious Teaching Award University Professor Honored Dwayne A. Wise

The 2008 Association of Southeastern Biologists Meritorious Teaching Award was presented to Dr. Dwayne A. Wise of Mississippi State University at the 69th annual meeting in Spartanburg, South Carolina, by award committee chair Dr. Kenneth Shull. The award is sponsored by Patron Member Carolina Biological Supply Company, Burlington, North Carolina, and consists of a plaque, a $1,500 check and copies of the letters of support for the meritorious teacher.

Dr. Wise grew up in Giles County, Tennessee, received his BA from David Lipscomb College and his MS and Ph.D. from Florida State University, where he studied under Dr. Margaret Menzel, who also won the Meritorious Teacher Award in 1985. Dr. Wise did postdoctoral work at the University of Texas Health Science Center and at Duke University. He has been in the Department of Biological Sciences at Mississippi State University since 1979, becoming Professor in 2001. He has been the recipient of many awards, including the ASB Faculty Research Award in 1991 and again in 2000. He was named the Outstanding Faculty Member by the Mississippi State University Student Association in 1988. Over his career he has taught thirteen different courses, but has concentrated on genetics, cytogenetics, cell biology and general botany. He has received numerous grants to support his research, which has focused on the mechanics of mitosis and meiosis. He has published 32 papers in refereed journals and has been the adviser for thirteen master's theses and two doctoral dissertations. He has been a very active member of ASB, having served on many committees and has served on the Executive Committee at Large, as Vice President and as President of the Association.

One writer of a letter of support quoted William Arthur Ward who said "The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires." The rest of his letters of support made it clear that Dr. Wise is a great teacher. Statements from these letters included the following.

The letters praised him for being demanding, but fair. They mentioned classroom teaching, teaching in the laboratory, and requiring students to read an article and then explain it to him. They talked about learning from him how to observe critically, how to read critically and how to not give up when things were not going well. Special praise was given for his teaching, not only undergraduate and graduate students, but taking his expertise to the elementary schools and high schools. He came in for high praise for allowing the students to become independent researchers, yet not allowing them to sink if they were too far off. He

was cited for helping the student to prepare talks at meetings, such as ASB, and giving them the confidence to make the presentation. The highest compliments came when former students said that they tried to emulate him in their own teaching.

The letters for Dr. Wise included the following:

"Dr. Wise made sure that we read the literature and had regular lab meetings to ensure that we were up to date and on target with our research. He made sure that we were free to make our own decisions about our research, but gave a very strong guiding hand when we were a little too lax or off track."

"The encouraging words, insightful teaching in the classroom and in the laboratory, talking science during walks to the cafeteria for lunch or coffee, patience, and steadfast support, allowed me to not only complete the doctorate, but grow as an undergraduate biology teacher."

"He has believed in me when I had no faith in myself."

"He has a reputation of being a great professor, and even his optional classes fill up quickly."

"He finds time to get to know his students."

"Dr. Wise sometimes takes his students to lunch to continue the discussion if the lab meetings run into the lunch hour."

"He has taken money out of his own pocket to allow students to attend meetings and present at those meetings."

"He assists us with our research, helps us meet our goals, and expects nothing short of excellence from us."

"He took me into his laboratory when I was a freshman. He showed me how to have an independent work ethic."

"Dr. Wise creates a comfortable classroom atmosphere in which his students do not hesitate to join in the discussions of the current topic."

"He never refuses to take time with his students."

From colleagues:

"I recently became an assistant professor in the department, and have found in him someone who is supportive, who offers good advice, and is willing to allow me to use whatever I need in his laboratory."

"He is one of the few people I know that, after being in science for years still absolutely loves the idea of discovering something new."

And finally, again from former students:

"Dr. Wise encourages an interest in biology at all educational levels. He teaches introductory courses when needed and does so in a manner that promotes genuine curiosity and thought, rather than rote memorization. He devotes a week each spring to the grading of AP Biology tests and participates in the development of the program and test questions."

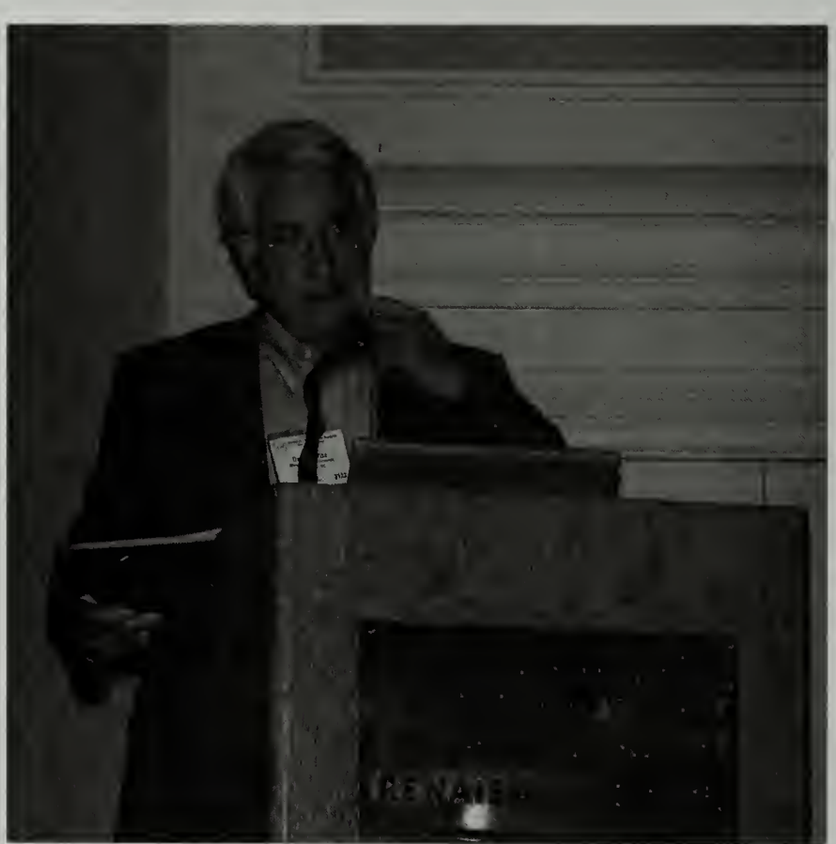
"He allows his students to work and think independently."

"I feel that Dr. Wise's teaching style has been a model that I use for my own. He was laid-back yet demanding."

"Dr. Wise was instrumental in my continued excitement about biology. This is an excitement that I pass on to my students today."

Dwayne Wise joins only five other ASB members in having been awarded the Senior Research Award, having served as President of ASB and now being named Meritorious Teacher. This is truly an outstanding member of our society.

Dwayne A. Wise (left) receives the 2008 Meritorious Teaching Award from committee chair Kenneth Shull (right). ASB President Michael Dennis (center) looks on approvingly.



Dwayne A. Wise expresses his appreciation on receiving the award.

2008 Research Award Recipients

ASB Senior Research Award

The ASB Senior Research Award sponsored by the Association of Southeastern Biologists was presented by award committee chair Nitya P. Jacob to **Kurt A. Buhlmann**, Savannah River Ecology Laboratory, Aiken, South Carolina, for his manuscript entitled "A global analysis of tortoise and freshwater turtle distributions with identification of regional priority conservation areas." The manuscript is in press at the journal *Animal Conservation*. His paper presentation at the annual meeting is entitled the same as the manuscript and is co-authored with Deno Karapatakis of the Savannah River Ecology and National Laboratories, Thomas B. Akre of Longwood University, John B. Iverson of Earlham College, and J. Whitfield Gibbons of the Savannah River Ecology Laboratory, *SE Biology* Abstract 208, 55(3).

Award committee chair, Nitya P. Jacob, submitted the following biography of Kurt A. Buhlmann.

Dr. Kurt Buhlmann is a conservation ecologist focusing on amphibians and reptiles. He has been fascinated with turtles since he was a boy. His research interests include life history and evolutionary ecology with application for conservation and management. Specific research interests include evaluating the amount of terrestrial habitat needed around seasonal wetlands for herps, the effects of prescribed fire, control of invasive species, and wetland restoration. He and his wife, Tracey Tuberville, have implemented some reintroduction strategies for gopher tortoises at several sites in the Southeast, and more recently begun designing similar research with freshwater turtles. Kurt is co-author of the Partners in Amphibian and Reptile Conservation's (PARC) Habitat Management Guidelines for Amphibians and Reptiles of the Northeast (as well as a companion volume for the Southeast). He has recently become involved with turtle habitat management projects on several National Wildlife Refuges.

Kurt spent several years working with Conservation International on conservation strategies for turtles globally, particularly in Asia. While at CI, he helped to create the Turtle Survival Alliance (TSA), a consortium of captive breeding specialists for turtle conservation, and the Turtle Conservation Fund (TCF), a partnership of institutions and individuals who are collaborating to raise funds for a global tortoise and freshwater turtle conservation. Mapping the distributions of the world's tortoises and freshwater turtles is a collaboration with several colleagues and is intended to integrate turtle conservation needs with existing global conservation strategies, as well as identify areas where turtles fall through the cracks.

Kurt holds a B.S. in Environmental Studies from Stockton State College, a M.S. in Wildlife Sciences from Virginia Tech, and a Ph.D. in Ecology from the University of Georgia. He has worked with a number of organizations including The Nature Conservancy, U.S. Forest Service, and U.S. Fish and Wildlife Service. He is currently an Associate Research Scientist with the University of Georgia's Savannah River Ecology Laboratory and Odum School of Ecology. He has taught Herpetology at Evergreen State College and the University of

Georgia. He is senior author on a new book, *Turtles of the Southeast*, just published by the UGA Press.

Kurt A. Buhlmann (left) receives the ASB Senior Research Award from award committee chair Nitya P. Jacob.

ASB Student Research Award

The ASB Student Research Award sponsored by the Martin Microscope Company, Easley, South Carolina, was presented by award committee chair Frank Romano to **Tracey D. Tuberville**, University of Georgia's Savannah River Ecology Laboratory, Aiken, South Carolina, for her paper co-authored with Terry M. Norton of the St. Catherines Island Wildlife Center, Travis C. Glenn of the University of Georgia, and Bradley J. Waffa of the University of the South entitled "Mating system in a gopher tortoise population established through multiple translocations: apparent advantage of prior residence," *SE Biology* Abstract 107, 55(3).

Tracey D. Tuberville (right) receives the ASB Student Research Award from award committee chair Frank Romano.

Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology

The Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology sponsored by the Cengage Learning—Brooks/Cole Publishing Company, Bellmont, California, was presented by award committee chair Frank Romano to **Steven J. Price**, Wake Forest University, Winston-Salem, North Carolina, for his paper co-authored with Michael E. Dorcas of Davidson College, Davidson, North Carolina, entitled "Factors at spatial and temporal scales influence stream salamander abundances in western Piedmont streams," *SE Biology* Abstract 57, 55(3).

Steven J. Price (center) receives the Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology from award committee chair Frank Romano (left) and executive sales representative Tom Ash of the Cengage Learning—Brooks/Cole Publishing Company.

ASB Research Award in Microbiology

The ASB Research Award in Microbiology sponsored by Cengage Learning—Brooks/Cole Publishing Company, Belmont, California, was presented by award committee chair Min-Ken Liao to **Mario Muscarella**, Armstrong Atlantic State University, Savannah, Georgia, for his paper co-authored with Judy Awong-Taylor and Jennifer Zettler of the same university entitled "The potential for pathogenic and non-pathogenic *Escherichia coli* to survive in beach sand from Tybee Island, Georgia," *SE Biology* Abstract 30, 55(3).

Mario Muscarella (left) receives the ASB Research Award in Microbiology from award committee chair Min-Ken Liao.

Mario Muscarella (right) also receives congratulations from microbiology award committee member Donald H. Roush.

ASB Student Poster Award

The ASB Student Poster Award sponsored by ASB was presented by award committee chair Ray Williams to **Amory L. Jendrek**, Davidson College, Davidson, North Carolina, for her poster co-authored with Joy M. Hester, Steven J. Price, and Michael E. Dorcas entitled "Seasonal body temperatures of resident and relocated eastern box turtles (*Terrapene carolina*) in North Carolina," *SE Biology* Abstract P13, 55(3).

Evan A. Eskew, Davidson College, Davidson, North Carolina, and the Savannah River Ecology Laboratory, Aiken, South Carolina, received Honorable Mention for his poster co-authored with John D. Willson, and Christopher T. Winne entitled "Ambush site selection and ontogenetic shifts in foraging strategy in a semi-aquatic pit viper, the Eastern cottonmouth (*Agkistrodon piscivorus*)," *SE Biology* Abstract P9, 55(3).

Amory L. Jendrek (center) received the ASB Student Poster Award from award committee chair Ray Williams (right). Evan A. Eskew (left) received Honorable Mention.

The North Carolina Botanical Garden Award

The North Carolina Botanical Garden Award sponsored by the NCBG, Chapel Hill, North Carolina, was presented by award committee chair Johnny Randall to **Katherine F. Weeks**, Clemson University, Clemson, South Carolina, for her paper co-authored with James L. Hamrick of the University of Georgia, and Joan L. Walker of the U.S. Forest Service entitled "Genetic diversity and structure in *Macbridea caroliniana*, a rare floodplain mint," *SE Biology* Abstract 136, 55(3).

Katherine F. Weeks (left) receives the North Carolina Botanical Garden Award from award committee chair Johnny Randall.

Eugene P. Odum Award

The Eugene P. Odum Award sponsored by the Southeastern Chapter of the Ecological Society of America was presented by award committee chair Diane De Steven to **Tracey D. Tuberville**, University of Georgia's Savannah River Ecology Laboratory, Aiken, South Carolina, for her paper co-authored with Terry M. Norton of the St. Catherines Island Wildlife Center, Travis C. Glenn of the University of Georgia, and Bradley J. Waffa of the University of the South entitled "Mating system in a gopher tortoise population established through multiple translocations: apparent advantage of prior residence," *SE Biology* Abstract 107, 55(3).

The Odum award committee recognized two honorable mentions. **Nicole M. Hughes**, Wake Forest University, Winston-Salem, North Carolina, received Honorable Mention for her paper co-authored with William K. Smith of Wake Forest University, and Thomas C. Vogelmann of the University of Vermont entitled "The functional significance of red abaxial coloration in understory

plants," *SE Biology* Abstract 88, 55(3). **Shannon Pittman**, Davidson College, Davidson, North Carolina, received Honorable Mention for her paper co-authored with Michael Dorcas also of Davidson College entitled "Population dynamics and demography of a bog turtle (*Glyptemys muhlenbergii* population in a Piedmont meadow bog," *SE Biology* Abstract 58, 55(3).

The award winner and the two honorable mention recipients each was presented a copy of Odum and Barnett's *Fundamentals of Ecology* textbook donated by the publisher, Cengage Learning—Brooks/Cole Publishing Company, Belmont, California.

Tracey D. Tuberville (second from right) receives the Eugene P. Odum Award from committee chair Diane De Steven (second from left). Nicole M. Hughes (far left) and Shannon Pittman (far right) each receive Honorable Mention.

ELSIE QUARTERMAN-CATHERINE KEEVER AWARD

The Elsie Quarterman-Catherine Keever Award sponsored by the Southeastern Chapter of the Ecological Society of America was presented by award committee member Danny Gustafson to **Nicole M. Hughes**, Wake Forest University, Winston-Salem, North Carolina, for her poster co-authored with Kent Burkey of North Carolina State University, Raleigh, Keith Reinhardt and William Smith both of Wake Forest University entitled "Red and green coloration in winter leaves: why do some evergreen species synthesize anthocyanins while others don't?" *SE Biology* Abstract P81, 55(3).

Nicole M. Hughes (right) receives the Elsie Quarterman-Catherine Keever Award from award committee member Danny Gustafson.

Society of Wetland Scientists South Atlantic Chapter Student Travel Awards

Chapter Treasurer William H. Conner reported that **Charlotte Steelman, Evan Eskew, Grant Connette, Staci Blecha, and Masamichi Ogasawara** were the recipients of student travel awards to the annual ASB meeting from the South Atlantic Chapter of the Society of Wetland Scientists. Award recipients must be currently enrolled students, conduct research pertaining to wetland science, and present their research at the ASB annual meeting. Each student was presented with a check at the chapter luncheon on Thursday, April 17, 2008.

1. **Charlotte K. Steelman**, Department of Biology, Davidson College, Charlotte, NC, for her paper co-authored with Michael Dorcas, entitled "Optimizing amphibian monitoring programs: Development of predictive models of anuran calling activity," *SE Biology* Abstract 51, 55(3).

2. **Evan A. Eskew**, Department of Biology, Davidson College, Charlotte, NC, for his poster co-authored with John D. Willson and Christopher T. Winne of University of Georgia, Savannah River Ecology Laboratory, Aiken, SC, entitled "Ambush site selection and ontogenetic shifts in foraging strategy in

a semi-aquatic pit viper, the Eastern cottonmouth (*Agkistrodon piscivorus*)," *SE Biology* Abstract P9, 55(3)..

3. **Grant M. Connette**, Department of Biology, Davidson College, Charlotte, NC, for his poster co-authored with Steven J. Price and Michael Dorcas, entitled "Abiotic factors influencing activity in stream salamanders," *SE Biology* Abstract P14, 55(3).

4. **Staci B. Blecha**, Old Dominion University, Norfolk, VA, for her paper co-authored with Frank P. Day, entitled "Inter-island variability in above- and belowground plant biomass in interior marshes on the Virginia barrier islands," *SE Biology* Abstract 149, 55(3).

5. **Masamichi Ogasawara**, Department of Forestry and Natural Resources, Clemson University, Clemson, SC, for his poster entitled "Plant coverage and biomass analysis of herbaceous vegetation in South Carolina tidally influenced freshwater forested wetlands," *SE Biology* Abstract P23, 55(3).

Recipients of the Society of Wetland Scientists South Atlantic Chapter Student Travel Awards. From left to right: Evan A. Eskew, Staci B. Blecha, Masamichi Ogasawara, Grant M. Connette, and Charlotte K. Steelman.

SOUTHERN APPALACHIAN BOTANICAL SOCIETY AWARDS

Howard S. Neufeld, outgoing President of SABS, presided over awards in three categories at the SABS/BSA Friday morning breakfast/business meeting. Conley K. McMullen, incoming President, announced the names of the awardees at the Friday night awards banquet.

Earl Core Student Award

Dr. Earl Core was a major force in the founding of the Southern Appalachian Botanical Club in 1936. The annual Core Student Award was established by the Society to provide financial assistance in support of student research projects in plant taxonomy,systematics, and ecology. The application deadline is February 1st of each year. Four monetary awards were presented this year to assist the following students with their research projects.

1. **Michael W. Denslow**, Department of Biology, Appalachian State University, Boone, North Carolina, "Spatial patterns, survey gaps and site selection bias in North Carolina floristics studies." Research Advisor: **Zack E. Murrell**.

2. **Alexandra Kay**, Department of Biology, Elon University, Elon, North Carolina. "The effect of wild boar (*Sus scrofa*) rooting on plant biodiversity in high-elevation beech forests of Great Smoky Mountains National Park." Advisor: **David Vandermast**.

3. **Lovie Mansfield**, Department of Biology, Valdosta State University, Valdosta, Georgia. "Genetic vs. environmental control of flowering time in two symnpatric *Gelsemium* species." Advisor: **John B. Pascerella**.

4. **Juan Carlos Villarreral**, Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, Connecticut. "Population genetics and evolutionary implications of the loss of sexual reproduction in the southern Appalachian hornwort *Megaceros aenigmaticus*." Advisor: **Bernard Goffinet**.

Richard and Minnie Windler Award

The Richard and Minnie Windler Award was established in 1990 at the annual meeting of SABS by Dr. Donald R. Windler of Towson University as a memorial to his parents. The award is presented annually to the author or authors of the best systematic botany paper published in *Castanea* during the previous year. The eligible papers may fall into the broad area of plant systematics, including floristic, experimental, revisionary, andnomenclatural studies.

A check for $500 was presented for the best systematics paper published in *Castanea* during 2007 to: **Aaron H. Kennedy** and **Gary L. Walker**, Department of Biology, Appalachian State University, Boone, North Carolina, for their paper entitled "The population genetic structure of the showy lady's-slipper orchid (*Cypripedium reginae* Walter) in its glaciated and unglaciated ranges," published in *Castanea* 72(4): 248-261 (December, 2007).

Elizabeth Ann Bartholomew Award

The Society annually presents this Award in memory of Elizabeth Ann Bartholomew's untiring service to the public, to plant systematics, and to this organization. This award is presented to individuals who have also distinguished themselves in professional and public service that advances our knowledge and appreciation of the world of plants and their scientific, cultural, and aesthetic values, and/or exceptional service to the society. The 2008 award goes to **Michael J. Baranski**, professor of biology at Catawba College, Salisbury, North Carolina. He received the award for his distinguished career promoting

environmental preservation, conservation, and awareness among his students and the public at large. In addition, he has served SABS in many capacities including President and Secretary-Treasurer. A detailed presentation of Dr. Baranski's accomplishments can be found in the September 2008 issue of *Castanea*.

Michael W. Denslow (right) one of the recipients of the SABS Earl Core Student Award is congratulated by incoming SABS President Conley K. McMullen at the Friday night banquet.

Michael J. Baranski (left) recipient of the SABS Elizabeth Ann Bartholomew Award is congratulated by incoming SABS President Conley K. McMullen at the Friday night banquet.

Botanical Society of America Southeastern Section Student Award

The Botanical Society of America Southeastern Section Student Award sponsored by the SE Section of the BSA presented two awards this year for the first time—one for best paper and one for best poster. Both awards this year were presented by award committee chair Lytton John Musselman to **Nicole M. Hughes**, Wake Forest University, Winston-Salem, North Carolina, for her paper co-authored with William K. Smith of Wake Forest University, and Thomas C. Vogelmann of the University of Vermont entitled "The functional significance of red abaxial coloration in understory plants," *SE Biology* Abstract 88, 55(3), and for her poster co-authored with Kent Burkey of North Carolina State University, Raleigh, Keith Reinhardt and William Smith both of Wake Forest University entitled "Red and green coloration in winter leaves: why do some evergreen species synthesize anthocyanins while others don't?" *SE Biology* P81, 55(3).

Nicole M. Hughes (left) receives the Botanical Society of America Southeastern Section Student Award for both best paper and best poster from award committee chair Lytton John Musselman.

The University of South Carolina Herbarium Award

The 2008 ASB (Association of Southeastern Biologists) Meeting in Spartanburg was the setting for the second annual "A. C. Moore Herbarium Plant Science Presentation" competition and award. This award is provided through the Endowment of the A. C. Moore Herbarium at USC in recognition of excellence in the presentation of botanical research, by either undergraduate or graduate students at USC. The award embraces all aspects of plant sciences, including molecular research. As a part of the competition, voucher specimens of plant materials used during the research must be made, deposited within the Herbarium, and referenced in the presentation or poster. This award has been designed to encourage involvement of young USC plant biologists at the annual ASB meeting, and as recognition of the importance of herbaria in documenting serious botanical research. Competitors for the award are judged by three non-USC personnel. One award of $500 is made, which may be split in the cases of a "tie". The award also pays for half of the applicants' registration fees, in this situation, $35 for each student.

Two winners were selected for the second annual award. Jeff Brannon presented the results of his project, "Floristic inventory of Aiken State Park, South Carolina". Will Cely presented the results of his project, "Plant and Landscape inventory of Sesquicentennial State Park, Richland County, South Carolina". Jeff and Will were both undergraduates, and their projects were formal studies developed as Independent Study course assignments within BIOL 399, under the direction of John Nelson.

Zack Murrell (Appalachian State University), Derrick Poindexter (Appalachian State university), and Wendy Zomlefer (University of Georgia) graciously provided invaluable assistance by serving as judges.

John Nelson (center), Curator of the A. C. Moore Herbarium, with winners of the second annual "A. C. Moore Herbarium Plant Science Presentation" award, Jeff Brannon (left) and Will Cely (right).

Beta Beta Beta Biological Society Southeastern Region Outstanding Paper and Poster Awards for 2008

At the 51st Tri-Beta Annual Meeting held with the 69th ASB meeting, Donald H. Roush, Southeastern Region representative presented the following awards. For the photographs, all individuals are identified from left to right with the winner in each category on the left and followed by second, third and honorable mention if one was given. Exceptions are noted in the individual category.

Southeastern District I Paper Session
Frank J. Brooks Paper Award Winner

1:45 **Andrea M. Cross,** Sigma Psi, Florida Institute of Technology. "Functional Architecture of Retinal Photoreceptor Arrays in the Endangered African Spurred Tortoise, *Geochelone sulcata*."

Andrea Cross, Florida Institute of Technology; April Clayton, Erskine College; Brittany Ross, Meredith College; Molly Aiken, Meredith College.

Southeastern District II Paper Session
Frank J. Brooks Paper Award Winner

2:45 **Karen Burwinkel,** Mu Iota, Northern Kentucky University. "Cytochrome P4501A1 and Arsenic in Benzo(a)pyrene-induced Carcinogenesis."

Karen Burwinkel, Northern Kentucky University; Natasha Vanderpool, Midway College; No third; (HM) Linda Bomboka, Columbus State University.

Southeastern District I & II Paper Session
Frank J. Brooks Paper Award Winner

2:30 **Jena Gladden,** Sigma Gamma, Erskine College. "Abatement of an Exotic Invasive Species and Restoration of a South Carolina Piedmont Riparian Ecosystem."

Jena Gladden, Erskine College; Graham Hickey, Guilford College; Marvin Morales, Guilford College.

Southeastern District I Poster Session
John C. Johnson Poster Award Winner

16. **John C. Santiago,** Sigma Psi, Florida Institute of Technology. "Modulation of cardiovascular gap junction proteins by stress catecholamines and their metabolites."

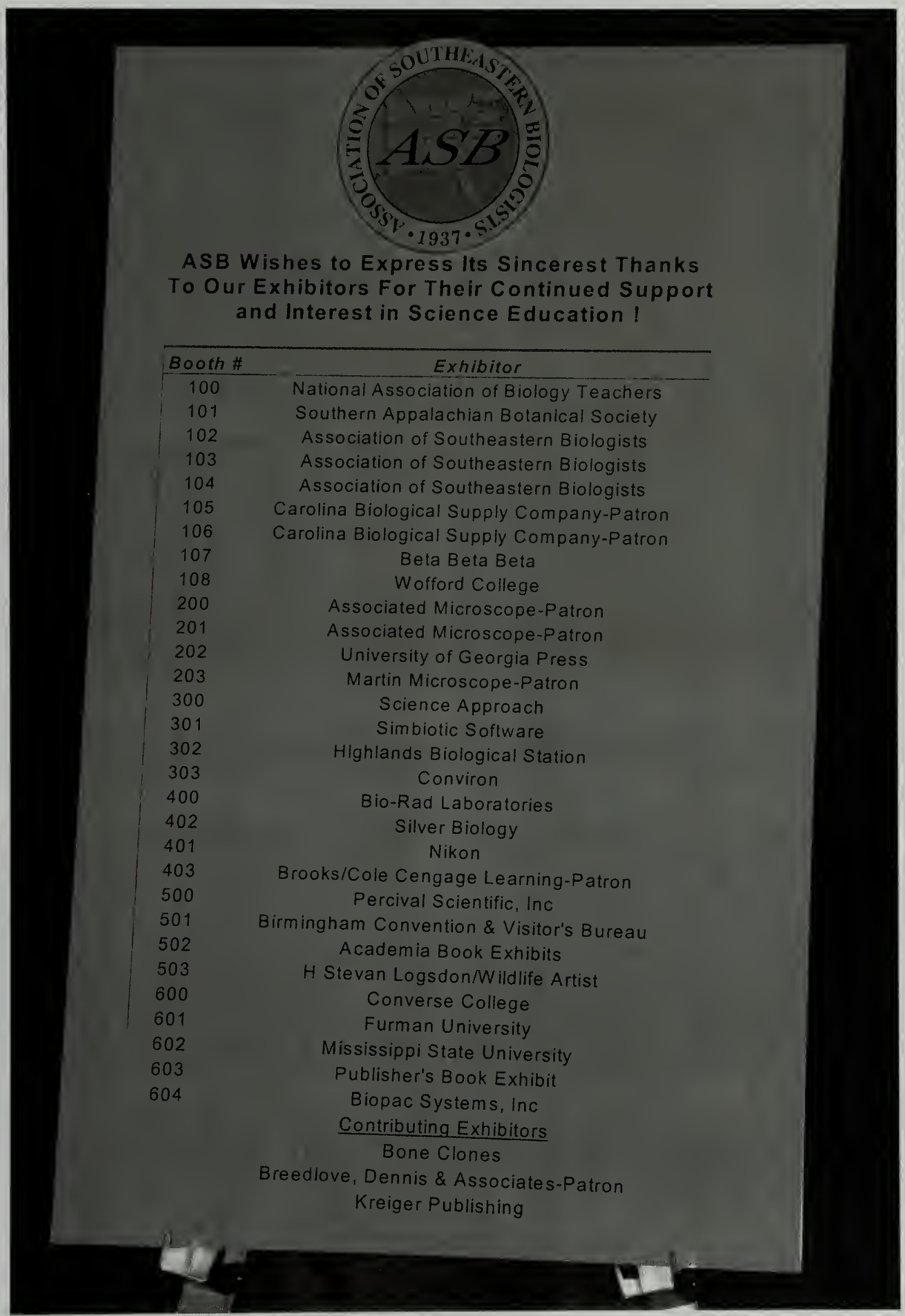
John Santiago, Florida Institute of Technology; Unidentified; (3rd place) Stina Webb, Armstrong Atlantic State University; (HM) Emily Kale, Meredith College.

Southeastern District II Poster Session
John C. Johnson Poster Award Winner

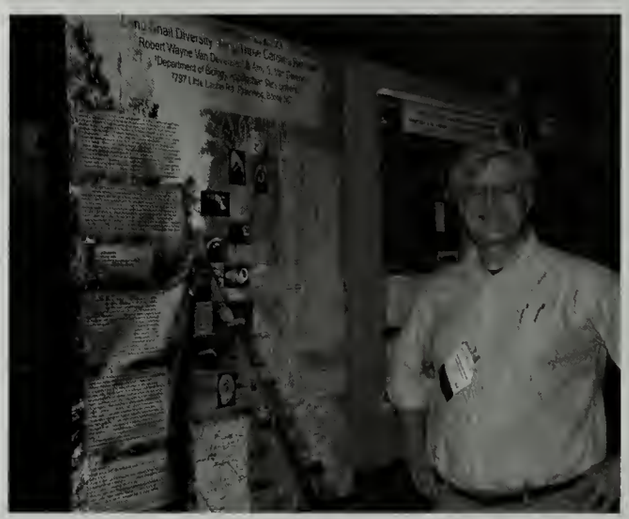
9. **Sara W. Jackson,** Mu Epsilon, Troy University. "Heat shock protein inhibition by 17-allylamino-17-demethoxygeldanamycin disrupts androgen receptor activity."

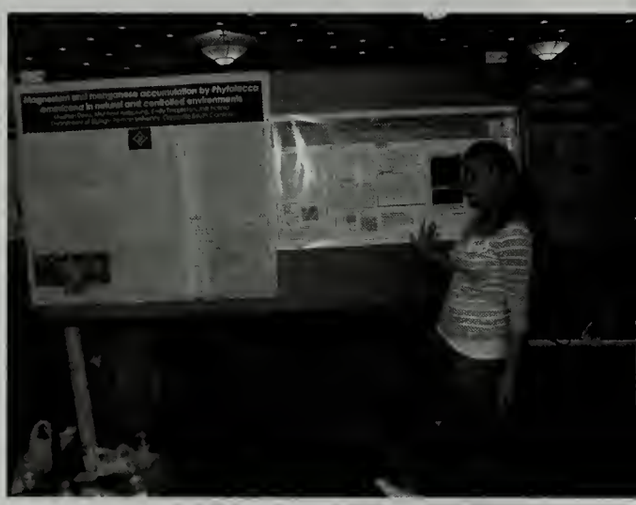
Sara Jackson, Troy University; Jennifer Barnes, Troy University; Eunice Yu, Columbus State University.

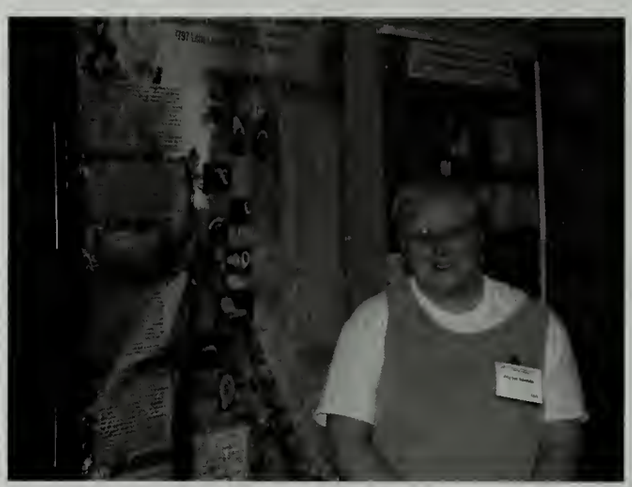
Past Presidents of ASB at the annual meeting. From left to right: Michael Dennis, Eloise Carter, Ross Hinkle, Kenneth Marion, Frank Day, Andrew Ash, Joe Winstead, Patricia Parr, John Herr, Michael Baranski, Howard Neufeld, Raymond Flagg, Kim Marie Tolson, Kenneth Shull, Lafayette Frederick, Dwayne Wise, and James Hardin.

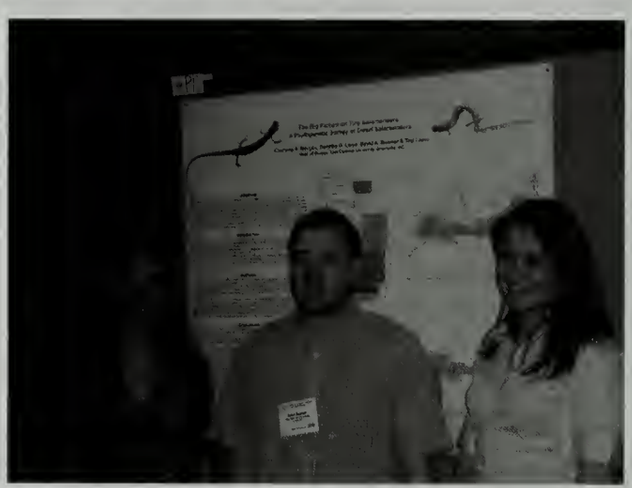

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS
ASB
• 1937 •
ASB Wishes to Express Its Sincerest Thanks
To Our Exhibitors For Their Continued Support
and Interest in Science Education !
Booth # Exhibitor
100 National Association of Biology Teachers
101 Southern Appalachian Botanical Society
102 Association of Southeastern Biologists
103 Association of Southeastern Biologists
104 Association of Southeastern Biologists
105 Carolina Biological Supply Company-Patron
106 Carolina Biological Supply Company-Patron
107 Beta Beta Beta
108 Wofford College
200 Associated Microscope-Patron
201 Associated Microscope-Patron
202 University of Georgia Press
203 Martin Microscope-Patron
300 Science Approach
301 Simbiotic Software
302 Highlands Biological Station
303 Conviron
400 Bio-Rad Laboratories
402 Silver Biology
401 Nikon
403 Brooks/Cole Cengage Learning-Patron
500 Percival Scientific, Inc
501 Birmingham Convention & Visitor's Bureau
502 Academia Book Exhibits
503 H Stevan Logsdon/Wildlife Artist
600 Converse College
601 Furman University
602 Mississippi State University
603 Publisher's Book Exhibit
604 Biopac Systems, Inc
Contributing Exhibitors
Bone Clones
Breedlove, Dennis & Associates-Patron
Kreiger Publishing

Poster Sessions at the Annual Meeting

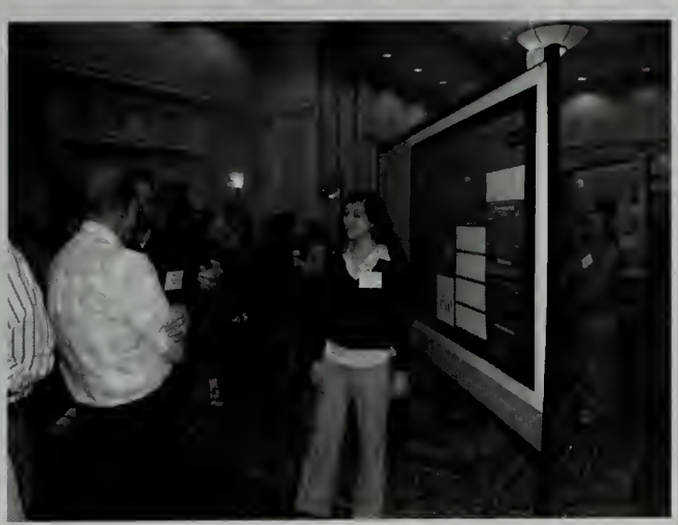




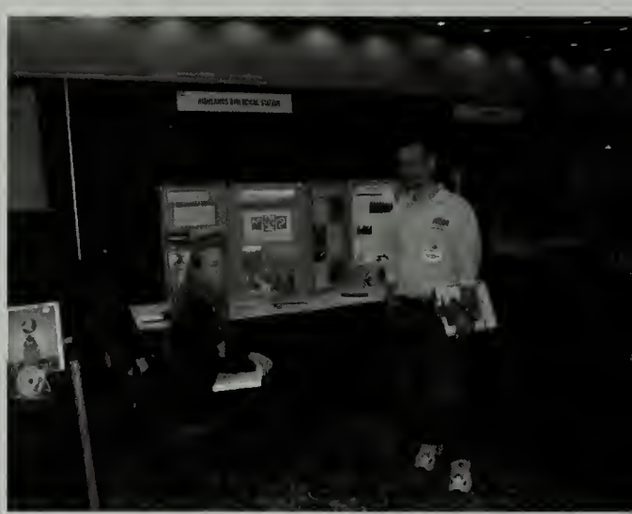




Poster Sessions at the Annual Meeting

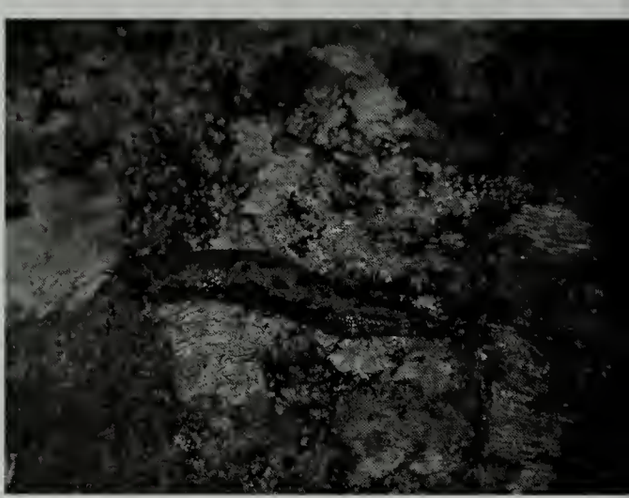


Exhibitors at the Annual Meeting



Exhibitors at the Annual Meeting

Herpetological Field Trip No. 3 Bat Cave and Hickory Nut Gorge, NC, led by Wayne Van Devender, Appalachian State University, and Ab Abercrombie, Wofford College.



The Pembroke Group

at Spartanburg, South Carolina

Pictured are faculty and students of the Department of Biology, University of North Carolina, Pembroke, who attended the 69th Annual Meeting of the Association of Southeastern Biologists in Spartanburg, South Carolina.

Pictured in the photo are (starting at the bottom and working up, from left to right): Dr. Bonnie Kelly, Katherine Montgomery, Mindy Love-Stanley, Dr. Patricia Sellers, Donna Kingsbury, Dr. Andrew Ash, Sarah Brown, Dr. Lisa Kelly, Dr. Debby Hanmer, Dr. Leon Jernigan, and Joey Powers. Also in attendance (but not pictured) were Dr. Bruce Ezell and Courtney Kilgore (now a graduate student at the University of Central Missouri).

RESOLUTION OF APPRECIATION TO

THE ROBERT H. MARTIN, SR. FAMILY AND MARTIN MICROSCOPE COMPANY

WHEREAS, the Robert H. Martin, Sr. Family and Martin Microscope Company have supported the Association of Southeastern Biologists through the decades by serving as a Patron Member to the organization; and

WHEREAS, the aforementioned family and Martin Microscope Company have so generously donated funds to establish the Robert H. Martin Professional Excellence Award; and

WHEREAS, the Association of Southeastern Biologists will be able to recognize and reward deserving members as a result of the generosity of the family and the Company; therefore, be it

RESOLVED, that the members of the Executive Committee and the Association of Southeastern Biologists give their sincere thanks and appreciation to all involved in making this possible.

The Robert H. Martin, Sr., Family.
From left to right: Robert H. Jr., Debbie, and Polly.

RESOLUTION OF APPRECIATION TO FURMAN UNIVERSITY AND WOFFORD COLLEGE

WHEREAS, Furman University in Greenville, South Carolina and Wofford College in Spartanburg, South Carolina did agree to make all local arrangements for the Association of Southeastern Biologists to hold its 69th Annual Meeting on 16 April through 19 April, 2008, in Spartanburg, South Carolina; and

WHEREAS, Local Arrangement Co-Chairs Joe Pollard of Furman University and Doug Rayner of Wofford College, Program Chairs Dennis Haney of Furman University and G. R. Davis of Wofford College did an outstanding job of orchestrating the events and organizing the symposia, poster and paper sessions; and

WHEREAS, Doug Rayner of Wofford College planned field trips, Victoria Turgeon of Furman University organized social events, Min-Ken Liao of Furman University and Stacey Hettes of Wofford College coordinated volunteers, Eli Hestermann of Furman University and Stacey Hettes of Wofford College coordinated Beta Beta Beta, Nicholas Schisler of Furman University coordinated audiovisuals, Edna Steele and Joe Ann Lever of Converse College arranged the silent auction, Leeds Corporation handled meeting registration and statistics, and Scott Jewell handled commercial exhibits, workshops, hotel accommodations and transportation; and

WHEREAS, the affiliate societies Southeastern Division of American Society of Ichthyologists and Herpetologists, Tri-Beta Southeastern District I, Tri-Beta Southeastern District II, Southeastern Section of Botanical Society of America, Southeastern Chapter of Ecological Society of America, Society of Herbarium Curators, South Atlantic Chapter of Society of Wetland Scientists, Southeastern Society of Parasitologists, and Southern Appalachian Botanical Society were in attendance and contributed to paper and poster sessions, workshops and symposia; and

WHEREAS, the citizenry of Spartanburg and Greenville, South Carolina and the administrators at Wofford College and Furman University cooperated to welcome ASB to the cities of Spartanburg and Greenville; and

WHEREAS, the students of Wofford College and Furman University volunteered to assist with the production of the 69th Annual Meeting; therefore, be it

RESOLVED, that the members and the Executive Committee of the Association of Southeastern Biologists give their sincere thanks and appreciation to all involved in making this an excellent and memorable Annual Meeting that resulted from the cumulative efforts of these individuals and organizations.

19 April 2008

OVER 1500 MUSEUM QUALITY
OSTEOLOGICAL REPRODUCTIONS

Whether for teaching, research, or study, Bone Clones® offers the most accurate, affordable and detailed reproductions available today. For a complete listing of our over 1500 products, please visit our website.

www.boneclones.com

1-800-914-0091
(toll free in the United States)

1-818-709-7991

BONE CLONES® INCORPORATED

©2007 BoneClones, Inc.® All Rights Reserved.

Symposium Summary

ASB Annual Meeting
Spartanburg, South Carolina
April 18, 2008

THEM'S THE BRAKES: THE PAST AND FUTURE OF NORTH AMERICAN BAMBOO

Organizer: Scott B. Franklin, University of Memphis

Cane (*Arundinaria*), the only bamboo genus native to the U.S., presently exists in small, remnant stands throughout most of the southeast. Large stands, called canebrakes, initially covering millions of acres, were vital to wildlife and played a pivotal role in the hydrology and landscape ecology of the area, and the cultural history of several native American tribes (e.g., Cherokee and Choctaw). Habitat demise was relatively rapid following European settlement of the southeastern U.S. due to a combination of agriculture, livestock grazing, and altered burning and flooding regimes. Today, canebrakes are regarded as one of the U.S.'s most critically endangered natural plant communities, covering <2% of their former extent, with expansive canebrakes non-existent. Listed as "Critically Rare" by USGS and as "Globally Rare" by TNC, the loss of canebrakes has directly impacted many riparian ecosystems resulting in the loss of wildlife habitat, soil erosion, poor water quality, and flood control. Historical accounts suggest the loss of these vulnerable habitats has resulted in the extirpation (and perhaps the extinction) of many species (Brantley and Platt 2001), including >3 species of birds and >20 species of lepidoptera, whose caterpillars feed on cane.. Unless the steps are made to conserve or restore large contiguous stands, this list of vulnerable species is expected to grow (e.g., Bachman's warbler, *Vermivora bachmanii*; swamp rabbit, *Sylvilagus aquaticus*).

In addition, canebrakes may have provided important functions in floodplains, such as streambank stabilization and buffering upland nutrient and sediment flow (Schoonover and Williard 2003). Thus, canebrake restoration is necessary for maintaining and enhancing biodiversity in the southeastern United States. However, transplantation attempts to reintroduce cane have met with limited success (Platt and Brantley 1993), perhaps due to our lack of knowledge on the environmental and physiological requirements of cane transplants. We currently lack an appropriate restoration target for canebrakes that characterizes historical extent and distribution, and elucidates ecological and physiological constraints. In addition, restoration is limited by the physical difficulty of moving transplants and the use of small, fragmented populations. Because canebrakes provide a habitat for a diversity of fauna, and because so little is known about the ecology of cane, research is needed to determine factors constraining growth of this unique ecosystem (Thomas et al. 1996).

Canebrakes also provide a medium for stabilization of stream banks and buffering between upland anthropogenic activities and streams. With <2% of

canebrake area remaining, it is difficult to know the historical importance of this ecosystem in landscape dynamics, or the potential canebrakes may hold for moderating impacts of an agricultural landscape. One study (Schoonover and Willard 2003) suggests the promise of cane buffer zones, reducing groundwater nitrate levels by 90%, 30% more than forest buffers. A final potential example of canebrake restoration is the dominance of exotic species in areas typical of canebrakes. *Microstegium vimineum, Ligustrum sinense*, and *L. vulgare* are 'severe threat' invasive exotics currently dominating potential canebrake habitats. Canebrake restoration could moderate the invasiveness of these exotic species.

Although interest in canebrake restoration and conservation for wildlife has been expressed by a number of conservation committees and authors, the amount of information about the biology and genetics of canebrakes and resources (e.g., plant materials) necessary to support large restoration activities is scant. This is a direct result of the unusual life cycle of bamboo. River cane is monocarpic, flowering once every 25-30 years (hence, a seed source is not available to generate propagules) and subsequently they die. While small restoration trials and propagation studies have provided a wealth of information, further studies are needed if large restoration activities are to be conducted.

This symposium was developed to elucidate our current knowledge of cane research, by 1) bringing together scientists studying everything from taxonomy to micropropagation (11 speakers), 2) giving state-of-the-art knowledge on restoration and propagation techniques, and 3) developing future research needs for *Arundinaria* species. The symposium began with an historical view of canebrakes and uses of cane, then important case studies on the environment of remnant canebrakes, North American bamboo taxonomy and genetic diversity, then aspects of cane ecology including ecosystem services, and finally methods of propagation. The symposium was partially supported by grants from the *National Fish and Wildlife Foundation* to Scott Franklin (University of Memphis) and from *Busch Conservation* to Brian Baldwin (Mississippi State University), and endorsed by the *Southern Appalachian Botanical Society*.

Descriptions of Presettlement and Historical Canebrakes

Christopher G. Brantley[1] (Presenter)
Steven G. Platt[2]
Thomas R. Rainwater[3]

[1]U.S. Army Corps of Engineers, Bonnet Carre' Spillway, PO Box 216, Norco, LA 70079; [2]Sul Ross State University, Department of Biology, PO Box C-64, Alpine, TX 79832; [3]155 Johnson Ferry Rd., Marietta, GA 30068.

At the time of European settlement, extensive monotypic stands of cane (*Arundinaria gigantea*), known as canebrakes, were a dominant landscape feature throughout the southeastern United States. This monopodial bamboo was likely a significant floodplain species and heavily utilized by Native Americans. Demographic collapse of the Native American population in the 1500s probably resulted in large vegetative expansion into fallow agricultural fields. Burning practices by the remaining inhabitants maintained and expanded canebrakes by eliminating competing woody vegetation. Canebrakes appear to be a dominant landscape feature from historic accounts as well as place names

from 16 southeastern states. Historical accounts also suggest that several species may have been specialized for this unique North American habitat. Canebrake decline was relatively rapid following European settlement likely due to a combination of landclearing for agriculture, livestock grazing, altered fire regimes, and changes to flood cycles in streams and rivers.

North American Ethonobotany of Cane

Steven G. Platt[1] (Presenter)
Christopher G. Brantley[2]
Thomas R. Rainwater[3]

[1]Sul Ross State University, Department of Biology, PO Box C-64, Alpine, TX 79832; [2]U.S. Army Corps of Engineers, Bonnet Carre' Spillway, PO Box 216, Norco, LA 70079; [3]155 Johnson Ferry Rd., Marietta, GA 30068.

Cane (*Arundinaria* spp.) was one of the most culturally important plants of Native Americans of the southeastern United States. Cane was used to construct houses and other shelters, fences, weapons (bows, arrows, knives, and blowguns), containers, and basketry, cane seeds (and probably shoots) were eaten, and livestock were grazed on the foliage, shoots, and rhizomes. Cane was also used medicinally. The cultural importance of cane declined rapidly following the settlement of the region by Euro-Americans because 1) cane became less available as canebrakes disappeared and 2) manufactured goods obtained through trade were deemed superior and replaced cane in local economies.

The chemical and physical soil properties of Arundinaria gigantea in western North Carolina

Adam Griffith[1] (presenter)
Kathy Mathews[1]
Dave Kinner[1]
Ben Tanner[1]
Rob Young[2]

[1]Department of Biology, Western Carolina University, Cullowhee, NC 28723; [2]Program for the Study of Developed Shorelines, Western Carolina University, Cullowhee, NC 28723.

Arundinaria gigantea (Walter) Muhl. is one of three bamboo species native to the U.S. and was once abundant in the southeastern states, growing on the floodplains of low energy rivers and streams. Destruction of canebrakes in western North Carolina has resulted in a cultural loss to artisans in the Eastern Band of Cherokee Indians who no longer have sufficient plant resources for traditional baskets, blowguns and other arts. In response to this loss, the Rivercane Restoration Project (RRP) has been initiated with two objectives: establish biophysical controls of *A. gigantea* and educate landowners, land managers, students, and the public about the merits of *A. gigantea*. Soil from 20 canebrakes was characterized for physical and chemical properties. Soil texture analyses using the "feel" method found sands and loams to be dominant in canebrake soils, and laser soil particle analyses of selected samples indicate average sand, silt, and clay contents of 56%, 30%, and 14%, respectively.

Canebrake soil bulk densities are low, ranging from 0.484 to 0.789 g/cm^3 at each site. Typical Munsell soil colors are chromas of 3 and 4 and saturated soil hydraulic conductivities range from 9.4 x 10^{-5} to 1.6 x 10^{-3} cm/sec for canebrake soils. Carbon and nitrogen levels of soils range from 0.642% to 5.672% and 0.056% to 0.387%, respectively. Nutrient analysis for seven micro and macronutrients has also been completed using inductively coupled plasma and atomic absorption spectroscopy techniques. Once optimal biophysical site parameters for the plant are established, recommendations can be made and incorporated into future restoration projects.

Phylogeny and taxonomy of the genus Arundinaria (Poaceae: Bambusoideae)

Jimmy Triplett (Presenter)

Ecology, Evolution and Organismal Biology, Iowa State University, Ames IA 50011.

Arundinaria has a long history of taxonomic confusion, including problems of species delimitation within the North American cane alliance and disagreement on the inclusion of East Asian and African taxa. This study reflects recent efforts to resolve the phylogeny of *Arundinaria* in the context of the temperate woody bamboo clade (19-31 genera, >500 spp.). A revised treatment based on molecular phylogenetic analyses recognizes a narrowly defined genus *(Arundinaria sensu stricto)* endemic to the southeastern United States, and the only native North American representative of the woody bamboos. Within this genus, molecular data (cpDNA sequences, AFLPs), morphology, and phytogeography support the recognition of three species: river cane *(A. gigantea)*, occurring inland primarily along river floodplains; switch cane *(A. tecta)*, more frequent in acidic swamps, seeps, and bogs of the Coastal Plain; and hill cane *(A. appalachiana)*, a recently characterized species from upland forests of the Appalachian Mountains. Diagnostic characters include rhizome structure, number and shape of leaves in clusters at the tips of new shoots, foliage leaf blade texture and persistence, leaf sheath auricles and fimbriae, and primary branch development. Molecular data also confirm the occurrence of natural hybrids, which are found in regions of overlapping distributions and are morphologically intermediate between parent species. The phylogenetic position of *Arundinaria sensu stricto* in relation to other temperate bamboo genera, including *Bashania*, *Pleioblastus*, *Pseudosasa*, *Sasa*, and *Thamnocalamus*, will be discussed.

Genetic diversity of Arundinaria gigantea (Poaceae) stands in western North Carolina and evidence for monoclonal flowering based on AFLPs

Katherine G. Mathews[1] (Presenter)
Joseph Huguelet[1]
Max Lanning[1]
Terryol Wilson[1]
Robert S. Young[2]

[1]Department of Biology, Western Carolina University, Cullowhee, NC 28723; [2]Program for the Study of Developed Shorelines, Western Carolina University, Cullowhee, NC 28723.

Arundinaria gigantea (river cane), a native bamboo species, was once abundant in river valleys of western North Carolina. Cane stands are now a rare ecosystem due to clearing for agriculture and grazing, but restoration efforts are underway. River cane reproduces mainly clonally, but sexual reproduction also occurs by gregarious flowering and fruiting, followed by death of the fruiting culms. The extent of clonality within river cane stands and the relationship between clones and sexual reproduction has not been investigated. It has been suggested that flowering culms are monoclonal, but this has not been tested. In this study, leaves were sampled from sterile and fruiting culms along transects from two stands in Jackson and Swain counties, North Carolina. AFLP fragments were generated for all samples using three primer pairs. Most of the resulting AFLP fingerprints generated were not identical; however, using a threshold dissimilarity technique, we estimated the probable number of clones in our samples. Overall, AFLP fingerprints show low clonal diversity within stands, but no genotype overlap between stands. The majority of fruiting culms within a stand were determined to be monoclonal and distinct from some, but not all, of the sterile culms. However, cluster analysis confirmed that fertile culms within each stand were more genetically similar to one another than to most of the sterile culms, and that the two different stands had distinct sets of genotypes. For restoration purposes, to promote genetic and clonal diversity, propagules should be collected from multiple stands or from multiple localities within a stand.

Disturbance ecology and population biology of giant cane (Arundinaria gigantea)

Paul R. Gagnon (Presenter)

Louisiana State University, Department of Biological Sciences, 202 Life Sciences Building, Baton Rouge LA 70803; currently at University of Florida, Department of Wildlife Ecology and Conservation, 110 Newins-Ziegler Hall, Gainesville FL 32611.

The fertile alluvial valleys and stream-side habitats of giant cane (*Arundinaria gigantea*) are subject to a host of natural disturbances. Prior to European settlement, giant cane thrived amidst windstorms, floods, fires and periodic droughts. These potentially interacting disturbances were major influences, and possibly key determinants in the formation of canebrakes. Like all woody bamboos (tribe Bambuseae), giant cane is a large, highly clonal forest grass. We sought to elucidate how interacting ecological disturbances affect the clonal biology of Arundinaria at our field-site in northeastern Louisiana in the lower Mississippi alluvial valley. We tagged and tracked individual culms of giant cane in burned and unburned stands growing under forest canopy and in a large tornado blowdown over six years, including a major drought during years 4 and 5. Our results indicate that interacting windstorm and fire disturbances may be critical to canebrake formation. Giant cane appears to be susceptible to drought, but fire may impart a degree of drought-resistance to newly regenerated culms. Fertilization experiments and anecdotal accounts suggest that giant cane may

thrive in the alluvial silt deposited by brief, intermittent floods. The disturbance regime in the lower Mississippi alluvial valley has been drastically altered during the last 100 years by river canalization and flood and fire suppression. Knowledge of giant cane's disturbance ecology must serve as a critical baseline for any successful canebrake restoration effort.

The utility of giant cane (Arundinaria gigantea) as a riparian buffer species in southern Illinois watersheds

Jon Schoonover (Presenter)
Karl W.J. Williard
Christopher R. Blattel, and
Chad Yocum.

Department of Forestry, Southern Illinois University, Carbondale, IL 62901.

Across the U.S., multiple species of riparian vegetation have proven to be effective filters of sediment and nutrients in agricultural watersheds. A research team at Southern Illinois University Carbondale has focused on giant cane (*Arundinaria gigantea* (Walt.) Muhl.) as a potential candidate to incorporate into riparian buffer designs. To date, 3 studies have evaluated giant cane's attenuation capabilities of sediment and nutrients from surface runoff and groundwater. The initial study monitored nutrient and sediment concentrations from surface runoff and groundwater in Cypress Creek watershed, while two subsequent studies focused on groundwater quality and added additional riparian buffer plots in Big Creek and Cache River Watersheds. Overland flow collectors and groundwater monitoring wells were used to collect water samples at fixed distances from the edge of three agricultural fields (i.e., 0m, 1.5m, 3m, 6m, 9m, and 12m). Results showed significant nutrient and sediment reductions within the first 3m of the giant cane buffers, whereas equivalent reductions were observed at ~6m in forested buffers. Nutrient reductions in overland flow in the cane buffer were 80%, 81%, 80%, and 68% for phosphate, total ammonium, dissolved ammonium, and dissolve nitrate, respectively. Further, sediment (97%) and groundwater nitrate concentrations (90%) were significantly reduced in the initial 3m of the cane buffer. Plant assimilation and microbial denitrification were likely key mechanisms for the nutrient reductions, whereas increased stem density and infiltration likely promoted deposition of sediment particles. Ongoing research is being conducted on bacteriological fate in giant cane buffers and has been expanded to the watershed-scale.

Use of a native bamboo (Arundinaria gigantea) for stream restoration in the Southeastern U.S.

Michael J. Osland (Presenter)
James W. Pahl, and
Curtis J. Richardson

Duke University Wetland Center, Nicholas School of the Environment, Box 90333, Durham, NC 27708-0328.

A native bamboo species (*Arundinaria gigantea* or giant cane) was once very abundant in wetlands and riparian areas throughout the Southeastern U.S. In

many parts of the world, bamboo species are used to restore ecosystem functions and there is much interest in assessing the use of giant cane for stream restoration in the Southeast. However, stream restoration efforts in the region are often hindered by exotic invasive plants and the success of cane restoration efforts will depend upon cane's ability to compete with these species. In this experiment, clumps of *A. gigantea* were transplanted into areas both dominated by and recently cleared of Chinese privet (*Ligustrum sinense*), a widespread invasive exotic shrub in riparian forests of the region. We measured cane survival, cane clonal expansion, privet recruitment, and percent cover of all species for two growing seasons. Cane survival was very high (91%). During the first year, there was little change in clump area, number of culms, culm height, or culm diameter. However, in the second year, the cane clumps in the cleared plots grew taller, produced more culms, and increased in clump area relative to the clumps beneath the privet canopy. Despite high recruitment and percent cover of Japanese stilt grass (*Microstegium vimineum*) and other species, transplanted cane culms continue to grow and expand.

Energy allocation in Arundinaria gigantean

Brian J. Rude[1] (Presenter)
Jennifer.L. Parsons[1]
Robert S. Sikes[2]
Tom Finley[2] and
Heidi A. Bissell[3]

[1]Mississippi State University, [2]University of Arkansas, Little Rock and [3]University of Wisconsin.

Developing information and tools to make effective management decisions for *Arundinaria gigantea* has been problematic. Understanding seasonal energy utilization and distribution by the plant in preparation for reproduction is essential to effectively manage established stands. This information is also vital for propagation of this species in laboratory settings. Two trials have been completed to evaluate nutrient concentration of both leaf and culm of *Arundinaria gigantea* during August and February. August, protein content was 5.8 and 17.3 % for culm and leaf, respectively, whereas February culm and leaf contained 3.7 and 19.7 %, respectively. Acid-detergent fiber portions did not differ between the two seasons; however, neutral-detergent fiber during August was 84.3 and 68.9 % for culm and leaf, respectively, whereas during February culm and leaf contained 91.7 and 76.5 %. Fat (ether extraction) was increased for both leaf and culm during February (8.9 and 10.7 %, respectively), compared to August (2.9 and 7.5 %, respectively). Independent of these analyses, seeds from flowering *Arundinaria gigantea* were obtained and ether extraction analysis was performed. *Arundinaria gigantea* seeds had 12.4 % fat. This indicates an increase of energy from both lipid and carbohydrate sources available to the plant during the reproductive season. Carbohydrates were readily available (sugars and starch) to the plant during early spring (February) compared to quiescent reproductive seasons (August). This increase in available energy may be in preparation for reproduction during the spring months.

Propagation Methods and Growth Enhancement of Rivercane (Arundinaria gigantea) Ramets for use in Field Restoration Projects

Brian S. Baldwin[1] (Presenter)
Margaret Cirtain[2]
John R. Ouellette[1]
Scott Horton[1], and
Scott B. Franklin[3]

[1]Department of Plant and Soil Sciences, Mississippi State University, Mississippi State, MS 39762, [2]Department of Biological Sciences, University of South Carolina, Columbia, SC 29208, [3]Department of Biology, The University of Memphis, Memphis, TN 38152.

As awareness and interest in canebrake restoration activities in the southeastern U.S. continues to grow, we are faced with numerous challenges. The greatest of these challenges is obtaining enough germplasm to support restoration activities, and providing vested stakeholders an accurate projected cost for these materials. This study evaluated several propagation methods and a restoration trial to begin to elicit information to meet these challenges. Seed germination, micro-propagation, macro-propagation, and transplanting methods were compared and evaluated based on: survivorship, labor intensity, success of establishment, and cost. While each method had its apparent strengths, only the macro-propagation method showed immediate promise with limited investment. Macro-propagated individuals were then used to support an initial restoration trial. Individuals used in this treatment were placed in two field light treatments, from three fertilization regimes, at three distances from a permanent water source. The findings of this study show the first detailed attempt to provide vested stakeholders valuable information for successful cane restoration.

Survival and growth of Arundinaria rhizomes in greenhouse and field plantings in the Cache River watershed, Illinois

J. J. Zaczek[1](presenter)
J. E. Schoonover[1]
S. G. Baer[2]
W. W. Brendecke[3]
J. L. Hartleb[4]
K. W. J. Williard[1]
J. W. Groninger[1]

[1]Department of Forestry and Center for Ecology and [2]Department of Plant Biology and Center for Ecology, Southern Illinois University, Carbondale, IL 62901, [3]U.S. Forest Service, Prairie City, OR, 97869, and [4]U.S. Fish and Wildlife Service, Puxico, MO, 63960.

The drastic loss of giant cane (*Arundinaria gigantea* (Walter) Muhl.) stands or canebrakes has necessitated restoration of this unique habitat. However, practical propagation and restoration methods are underdeveloped. Greenhouse and field studies using rhizomes were monitored for up to five growing seasons at seven different sites with cooperation from The Nature Conservancy, the Cypress Creek National Wildlife Refuge, and the Illinois Department of Natural

Resources. In one study, for 115 greenhouse-grown containerized cane propagules that were field-planted, survival was 62%, 48%, and 41% at ages 1, 2, and 5, respectively and was independent of collection origin (putative genotype). For survivors at age 5, the mean number of culms per propagule increased from1.5 after one year to 80.0 after five years. The maximum lateral spread was 6.9 m with mean of 3.0 m. In another study, prescribed fire in a five-year-old planting reduced percentage cane cover, height, and diameter but increased culm density compared to controls. Burning resulted in a >2x increase in culm density in plots measuring lateral spread. Without burning, fertilization increased percentage cover and culm height compared to controls. Summarizing other studies, survival and growth of planted cane related to collection origin, planting site, and are greater for container-grown versus bare rhizomes. Once established a year after planting, mortality tended to be low and culm height and spread steadily increased. Survival for field-planted bare rhizomes tended to be greater for longer rhizomes with more buds and nodes. Pre-planting herbicide application was not beneficial for survival or growth.

Discussion & Summary

We examined four main areas of research of *Arundinaria*: 1) historical extent and use, 2) taxonomy and genetic variance, 3) ecology (edaphic controls to competition), and 4) propagation with the goal of integrating these results toward the restoration of canebrakes. We attempt to summarize these concepts.

Canebrakes were widespread and culturally very important to Native Americans, and indeed the first Euro-Americans. References of cane uses include food, medicine, weapons and building material. Such an omnipotent plant is rare indeed, as is any woody grass. There are now three species of *Arundinaria*, with hill cane restricted to the Appalachian Mountains, and both river cane and switch cane widespread throughout the southeastern coastal plain. *Arundinaria* remains the only genus of bamboo in North America. The northern limit of cane is not fully understood, but may be a result of its evergreen nature and ability to photosynthesize through the temperate dormant season. Limits of cane distribution regionally are determined by proximity to water and good soil drainage. Both historical accounts and remnant brake environmental data suggest cane dominates areas of high soil moisture, in fact annually inundated, but good soil aeration (>50% sand). Levees and other raised areas of first bottoms provide such an environment, where large brakes filtered sediment and water, and stabilized stream banks. Such ecosystem services are a major reason for canebrake restoration, and must take into account the soils prior to restoration efforts. Strong clay soils with high bulk density, typical of old fields, may not be effective restoration sites.

While cane is not uncommon, canebrakes (large monocultures) are almost nonexistent. Canebrake decline was relatively rapid following European settlement in the southeastern United States likely due to a combination of land clearing for agriculture, livestock grazing, altered fire regimes, and changes to flood cycles in streams and rivers. The fragmentation of cane populations results in the loss of ecosystem services, provided only through the larger stands (i.e., canebrakes), and concern over the loss of genetic diversity. It appears cane has low clonal and allelic diversity both within and between stands, and that fruiting

culms are monoclonal. With the knowledge that bamboo is an outcrosser (perhaps obligate), such fragmentation may lead to fewer and fewer flowering events, and eventual loss of cane in areas strongly fragmented (past some threshold). Indeed, the monoclonal results shown by Mathews et al. may be a product of fragmented populations, rather than the norm if populations are widespread. An additional threat to cane is invasive species, such as privet, that may preempt natural cane reestablishment following creation of canopy gaps. Cane clearly responds to canopy openings from natural or anthropogenic disturbance, suggesting it is shade intolerant. However, if cane is not currently in the understory of these canopies, it has little ability to move there.

Ultimately, new individuals of cane must be developed for restoring canebrakes. Restoring a 20 ha field may require 1 million individuals. With rhizome transplants only 50-75% effective, and thereby a loss of individuals, restoration will be dependent on micro- and macro-propagation. To date, macropropagation of rhizome sections has rendered the greatest results with the least amount of effort and money, providing hundreds of individuals for planting. However, propagation is restricted to Jan-June, due to the seasonal energy allocation of cane. One key to the propagation effort is the diversity of genetic material (germplasm) used for propagation and cultivated in restoration, not only to insure success of canebrake establishment but also future outcrossing events. Once methods are established, several local germplasms from an area of restoration interest may be used to develop new individuals for planting.

With the historical knowledge of the importance of cane, both culturally and environmentally, contemporary studies elucidating ecosystem services of canebrakes, and methods for propagation of cane, we are poised in the southeast to develop a broad scale restoration effort similar to long-leaf pine. There is little doubt that the loss of the canebrake ecosystem has affected regional biodiversity and the quality of floodplains. Challenges that remain include propagation, a greater understanding of the fauna (especially small mammals, birds, and insects) that utilize canebrakes, and further examination of the efficacy of restored canebrakes to provide the essential habitat and ecosystem services.

References

Brantley, C.G. and S.G. Platt. 2001. Canebrake conservation in the southeastern United States. Wildlife Society Bulletin 29:1175-1181.

Platt, S.G. and C.G. Brantley. 1993. Switchcane: propagation and establishment in the southeastern United States. Restoration & Management Notes 11:134-137.

Thomas, B. G., E. P. Wiggers, and R. L. Clawson. 1996. Habitat selection and breeding status of Swainson's warblers in southern Missouri. Journal of Wildlife Management 60:611-616.

Schoonover, J.E. and K.W J. Williard. 2003. Ground water nitrate reduction in giant cane and forest riparian buffer zones. Journal of the American Water Resources Association 39:347-354.

Suggested citation: Franklin, S.B., Brantley, C.G., Platt, S.G., Griffith, A., Mathews, K.G., Gagnon, P.R., Schoonover, J., Osland, M.J, Rude, B.J., Baldwin, B.S., Zaczek, J.J. 2008. Them's the Brakes: The Past and Future of North American Bamboo. Southeastern Biology 50: 431-440.

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS 2008

TREASURER'S REPORT FY 1 JANUARY-31 DECEMBER 2007

I.	**BEGINNING BALANCE**			**$41,288.00**
II.	**RECEIPTS**			**$146,103.00**
	Southeastern Biology Receipts		$23,940.00	
	Membership Dues	$23,940.00		
	Enrichment Fund Receipts		$4,289.00	
	Enrichment Contributions	$4,190.00		
	Interest	$99.00		
	ASB Annual Meeting Receipts		$117,874.00	
	Registration	$103,185.00		
	Exhibits	$13,285.00		
	Silent Auction	$1,404.00		
III.	**TOTAL RECEIPTS & BEGINNING BALANCE**			**$187,391.00**
IV.	**DISBURSEMENTS**			
	Southeastern Biology Expenses		$(25,185.00)	
	Publication	$(23,790.00)		
	SE Biology 54(1) $(3,261.00)			
	SE Biology 54(2) $(5,140.00)			
	SE Biology 54(3) $(6,672.00)			
	SE Biology 54(4) $(4,539.00)			
	SE Biology 55(1) $(4,178.00)			
	Office Expenses	$(780.00)		
	Web Site	$(600.00)		
	Bad Check	$(15.00)		
	Enrichment Fund Expenses		$(28.00)	
	Bank Charges	$(28.00)		
	ASB Annual Meeting Expenses		$(117,129.00)	
	Registration	$(28,754.00)		
	Exhibits	$(2,725.00)		
	Meeting	$(71,250.00)		
	A2Z Convention Services	$(14,400.00)		
	TOTAL DISBURSEMENTS			**$(142,342.00)**
V.	**ENDING BALANCE**			**$45,049.00**

ASB ENRICHMENT FUND
1 JANUARY – 31 DECEMBER 2007

I.	**BEGINNING BALANCE**		**$41,288**
II.	**RECEIPTS**		
	1. Contributions	$4,190	
	2. Interest	$99	
	TOTAL RECEIPTS		**$4,289**
III.	**TOTAL RECEIPTS AND BEGINNING BALANCE**		**$45,577**
IV.	**DISBURSEMENTS**		
	1. Outstanding Biology Teacher Award	$(500)	
	2. Bank Charges	$(28)	
	TOTAL DISBURSEMENTS		**$(528)**
V.	**ENDING BALANCE**		**$45,049**
VI.	**NET INCREASE**		**$3,761**

ASSOCIATION OF SOUTHEASTERN BIOLOGISTS
EXECUTIVE COMMITTEE MEETING
APRIL 2008

MEMBERSHIP OFFICER'S REPORT

2008 ASB DECEASED MEMBERS

I. William Carpenter	Victor Rudis	Larry T. Wimer
Wayne R. Faircloth	Robert Brown Short	

2008 ASB EMERITUS STATUS REQUESTS

B. Allen Dunn	J. Kenneth Shull, Jr.

CURRENT MEMBERSHIP

	Apr 05	Mar 06	Mar 07	Apr 08
Complimentary	20	20	27	10
Contributing	11	11	8	8
Emeritus	65	73	74	65
Exhibitor	?	?	35	48
Family	33	32	36	27
Library	56	56	52	49
Life	11	25	38	45
Patron	7	7	7	7
(Life & Patron	2	2	2	2)
Regular	787	892	821	711
Student	308	517	559	403
Sustaining	4	2	2	2
TOTAL	**1302**	**1635**	**1659**	**1375**

Respectfully submitted,
Deborah K. Atkinson, ASB Membership Officer

The Association of Southeastern Biologists

Past President's Address

SCIENCE, POLITICS, RELIGION...AND CRITICAL THINKING

W. MICHAEL DENNIS, PH. D.

First, let me say it has been an honor to serve you members of The Association of Southeastern Biologists (ASB) as your president. I have addressed you previously in these pages arguing the case for the importance and relevancy of ASB as an organization in these times and the importance of its goals and mission. I reiterate these arguments and belief.

As is the custom, the Past Present is afforded the opportunity to address the membership with parting thoughts. In years past, this has been an oral address at the Friday Night Banquet. The current practice is through publication in the pages of *Southeastern Biology*. I must admit some apprehension and no small amount of trepidation at embarking upon these thoughts on "Science, Politics, Religion...and Critical Thinking". However, I feel the time is critical and that these topics, especially as to how they interrelate, have and are affecting our practice of biological sciences. The applications of Science, Politics, and Religion have become so interwoven and mixed up that to the undiscerning, one arena often passes for the other without so much as a mention or notice. Let me hasten to say that I realize this is not new or unprecedented. Reflect to the era when the consensus of the scientific community supported the belief that the earth was the center of the universe, with the sun revolving around it. And there was the time in the not to distant past where the science of the day supported the theory that the world was flat. Our understanding of the origin and treatment of diseases is even more recent and the seeds of the environmental movement are more recent still. I dare say politics and religion have played their role in these few examples to name just a few. The details of these and many more examples of politics and religion having had their influence on the application of science are beyond the scope of this brief discussion, and I suggest a reading of history as a valuable pursuit for all to expand on these stories, be they anchored in the world of science, politics, or religion.

The advancements in all fields of science over the past 40 years have been astonishing. You could point out other periods of time and make the same statement, but my critical timeframe for personal observations is only 40 years or so. This time period dates to the emergence of the current environmental movement. Note that the National Environmental Policy Act (1969), the Clean Water Act (1972), the Endangered Species Act (1973) all date to this past 40 years. And the human genome which we now have mapped had its theoretical roots set in the early 1960s. There can be no doubt of the advance in the past 40 or 50 years of our scientific understanding of the natural world, medicine and I might add theoretical physics where smaller and smaller subatomic particles have been described and the further recesses of the universe explored. Out of the advancements and understanding of the natural world and its many interactions has come the environmental movement and

environmental activism. Some have argued that this movement now is a religion of sorts. I know of no credible argument that can be made that we should not take care of the one earth that we have and be good stewards of its biota and natural resources; however, how we approach this stewardship requires critical understanding and evaluation, not just a recitation of platitudes to "save this" and "save that", without trying to critically understand all the consequences of our well-intended actions.

Organized religion has always been interested in the how, as well as the why of the world. Look no further than the first chapter of Genesis on the interest of religion in how the world was created. Science has weighed into this how at various times, and in a big way in 1859. So in the upcoming 150th Anniversary of Darwin's momentous tome "The Origin of the Species...," we as a society find ourselves in often-acrimonious debates over how old the world is and how it got here. This debate flows over into the political arena involving laws regulating what can be taught in public schools. How science is taught to our children who are the future of science, will affect future approaches to discovery and learning.

And what of one of our more recent debates over the increases in warming of our world, i.e. global warming. The fact that the world has been warming for the last 18,000 or so years with some notable temporary reversals, did not make the news; however, the influence of humanity on this long occurring cycle has not only become newsworthy, but set off significant political debate intertwining energy policy, environmental policy and has even spilled over into the pews of organized religion.

As interrelated as some of these topics can appear and in some aspect clearly are, it is fundamental that science, politics and religion are clearly understood for what they are and that their particular agendas are not transposed on each other. It seems that critical thinking in this regard is on sabbatical and that these examples and many more are being approached as ideologies by some factions of our society rather than as topics which should be subjected to current and ongoing critical thinking. We have become so inoculated with "political correctness" that critical questioning of a currently popular scientific view becomes virtually impossible as the questioner is more often dismissed as being motivated by a conflicting political or religious view. We need environmental solutions to our many interrelated environmental problems, not advocacy of positions. Our politicians need to use science as a basis for sound policy decisions, not as a twisted placard played for political sound bites with too little understanding or explanation. When religion seeks to "scientifically" prove the Bible, it risks loosing the key to its soul–faith. It should be transparently clear and obvious that all these things are happening. What is missing is the quiet reasoned voice that says, okay, I hear your point of view and respect it, but do you mind if we critically examine it without the demagoguery of scientific peer pressure, political outcry, or religious condemnation. We as scientists should, as our first obligation, be critical thinkers. We should challenge every scientific thought and principle that has ever been published. It is only through continually examining and reexamining our assumptions, adding and evaluating new data, and proposing and testing new hypotheses that we can continue the tremendous advances that have led to curing of many diseases, expanding the life expectancy and health of much of humanity, and a more complete and thorough

appreciation of our natural world, its biotic components, and their critical linkages and interactions.

My apprehension and trepidation is even more intense having written about this topic. If you say, "What is he talking about?" I'll accept the proposition that I don't. If you have been offended, then I ask you to critically evaluate what offended you. And if you should say, "I think I know what he is talking about", then promote and practice the notion of critical thinking.

Past President W. Michael Dennis presided over the Friday night awards banquet. ☙

DARWIN BICENTENNIAL: HOW CAN ASB BIOLOGISTS MAKE DARWIN PROUD?

Robert Y. George
Adjunct Professor, Rosenstiel School of Marine and Atmospheric Sciences, University of Miami
and
President and CEO, George Institute for Biodiversity and Sustainability, Wilmington, North Carolina 28409
www.GIBSconservation.org

During the 60th ASB annual meeting in Wilmington, North Carolina (1999) the world-renowned conservation biologist Prof. Edward O. Wilson gave the keynote address and emphatically appealed to ASB members that all scientists and policy-makers should give high priority to protect our endangered ecosystems from further habitat loss and fragmentation in the years ahead.

In my visits to the Museum of Comparative Zoology (MCZ) at the Harvard University in the last decade, I had the unique opportunity to discuss on a one-on-one basis the challenges we face today concerning the rapid decline of biodiversity, with 30% of the species now inhabiting our forest ecosystems vanishing from existence. This high rate of extinction is attributed to a multitude of environmental factors, chiefly the consequence of man-made changes including climate change. *Homo sapiens*, as a single species, is now threatening the existence of numerous other species co-inhabiting the 'Planet Earth' which is now quickly reaching a "Tipping Point", when we will cross the threshold to reach an irreversible situation. (Pictured above, Ed Wilson and the author at MCZ.)

In 2008, at the 69th ASB annual meeting in Spartanburg (South Carolina), the outstanding ecosystem ecologist Prof. William Schlesinger, President of the Cary Institute for Ecosystems Studies in Milbrook, New York, gave the keynote address. He is the champion forest ecologist and in recent years has done experimental field research with his colleagues in the 'Duke Forest' in Durham (North Carolina) to document the impact of high carbon atmosphere in the loblolly-pine ecosystem.

The so called FACE (Free-Air Carbon dioxide Experiment) at the Duke Forest yielded interesting results to show how the temperate loblolly pine (*Pinus taeda*) ecosystems will be in the high-carbon world in the future with atmospheric CO_2 levels in excess of 400 ppm in 2025. Dr. William Schlesinger and his co-workers, when he was dean of the Nichols School of Environment in the Duke University, discovered that after 8 years of exposure to high CO_2 ambient levels, the following changes occurred: 1. Photosynthetic rates by canopy foliage

increased over controls. 2. Pine biomass increment increased by 108 g C per Meter Square per year, with concurrent basal area of pine tree stimulated by 13-27%. 3. Enhanced growth and respiration of roots in the CO_2 fumigated plots. 4. Incidence of larger Poison ivy growth and more poisonous at elevated atmospheric CO_2. This is really bad news unless we make drastic efforts in the next decade to reduce CO_2 emissions by shifting from a carbon-based fuel economy to renewable sources of energy such as wind, solar and geothermal. (Pictured right: William Schlesinger, Carey Institute.)

Unfortunately, similar simulated *in situ* field studies (such as FACE) are extremely rare in aquatic ecosystems, virtually absent in marine environment. However, in a recent research report, published in *Geophysical Research Letters* (Vol. 34: p. 7603, 2007), Dr. Frederic Gazeau and co-workers of the Netherlands Institute documented that ocean acidification resulting from human emissions of CO_2 and its entry into coastal waters lowered pH. The consequent decrease in calcium carbonate saturation potentially threatens calcification in the oyster species *Crassostrea virginica* and also in the edible mussel species *Mytillus edulis*. In fact, these authors documented by laboratory experiments that increasing pCO_2 calcification rate declined linearly from 10 to 25%. Oyster reefs have steadily declined off Louisiana, Chesapeake Bay in Maryland and Pamlico Sound in North Carolina, due to pollution, turbidity and also acidification now. Intergovernmental Panel on Climate Change (IPCC) reported that by 2100, atmospheric CO_2 may reach its pinnacle at >550 ppm. and this scenario can lead to the extinction of most shell-bearing animals which can not secrete their skeleton. This situation is similar to the "punctuated equilibrium" scenario wherein evolutionary biologists attributed ecosystem change and regime shift occurring as a consequence of some natural force and in the case of climate change it is a man-made impact. The target species is not just the habitat-making oysters but also the habitat-dependent species such as the oystercatcher. Already oystercatchers are getting rare in Chesapeake Bay where they were once abundant.

Oystercatcher, *Haematopus chathamensis*

At the 11th International Coral Reef Symposium in Fort Lauderdale (Florida), held between July 7–11, 2008, we organized a workshop with scientists and federal government managers with a question how do we avoid this impending disaster coming from a high carbon world by 2050 where coral reefs both in the tropical waters and in the deep-cold waters all over the world will be adversely impacted. Coral species that evolved in hundreds of millions of years are now on the verge of extinction within half a century by severe stress of increasing ambient temperature and also shoaling of aragonite and calcite saturation horizons in our oceans. Man-made climate change is the culprit and we have a decade to fight this crisis and reverse the conditions by drastic reductions of carbon dioxide flux to the atmosphere and to the Earth's ecosystems.

My research colleague at the world-renowned Plymouth Marine Biological Station in UK Dr. Jason Hall-Spencer recently wrote in *Nature* (Vol. 07051, 2008) to prove that ecosystem level changes are happening in the shallow vent ecosystems off Ischia Island in Italy. "Our understanding of the how increased ocean acidity may affect marine ecosystems is at present very limited as almost all studies have been in *Vitro*, short term, rapid perturbation experiments on isolated elements of the ecosystem".

For the first time, Hall-Spencer and his colleagues showed in their 2008 *Nature* paper that volcanic vents were lowering the pH of the water column in their Mediterranean Sea study site from normal 8.2 to as low as 7.5 pH. This drastic drop in ambient pH caused extinction of endemic scleractinian coral species, which have aragonite (a polymorph of calcite) skeleton. This spatial-temporal disappearance of hard corals changed the community structure of the ecosystems. Species prevalent in this unique ecosystem now with reduced pH are really a suite of organisms that are resilient to natural high concentrations of PCO2. Are we witnessing ecosystem evolution taking place in front of our own eyes rather rapidly in our lifetime? This is such a short time span of 30 years, more or less a generation time. Can we interpret this event induced by climate change processes in Darwinian perspectives?

The third chapter in the "Origin of Species" (1857) deals with struggle for existence and this is the keystone of the science of ecology. Darwin in his voyage aboard *H.M.S. Beagle* visited Cocos Atoll, south of the Maldives Islands. He posited his theory on the origin of coral atolls. He argued that the tropical fringing reefs around an island subsided and sank with increasing sea level. In geologic time the sunken fringing reefs grew and emerged above the surface leaving a lagoon in between. His theory was proven right only in 1951 when US geologists discovered while surveying Pacific Marshall Islands' atoll reefs, just prior to testing a bomb. Piston coring clearly found that Darwin was right. In Marshall Island atoll the drill would go 4200 feet before striking the underlying limestone and basalt. Darwin must have been a genius!

Charles Darwin lived in the nineteenth century when biologists were mainly exploring the land and ocean ecosystems to discover vast number of new species that were described in the Linnaean binomial scheme with a genus and species name. His contemporary Sir Wyville Thompson led the famous *Challenger* Expedition that discovered numerous species new to science.

Darwin in the very last paragraph of his book "Origin of Species", narrates the wonder and beauty behind the action of 'Natural Selection" in unfolding a rich variety of organisms (1.7 million species described and may be 10 million species, yet to be known to science as per estimates made by Harvard University biologist Edward O. Wilson). Suddenly we now recognize that 30% of the species in forests and 30% of the coral species in the seas may go extinct in our life time (less than 50 years). In his classical books (The Ants, Journey to the Ants, *Pheidole*, The Diversity of Life, Sociobiology, Biophylia, Consilience, On Human Nature, The Evolution: First Four Billion Years, Future of Life and Creation) E. O. Wilson has made an appeal to theologians, the public and decision-makers that we need to take swift action to reduce human impact on existing species diversity. (Pictured right: Charles Darwin at age 51.)

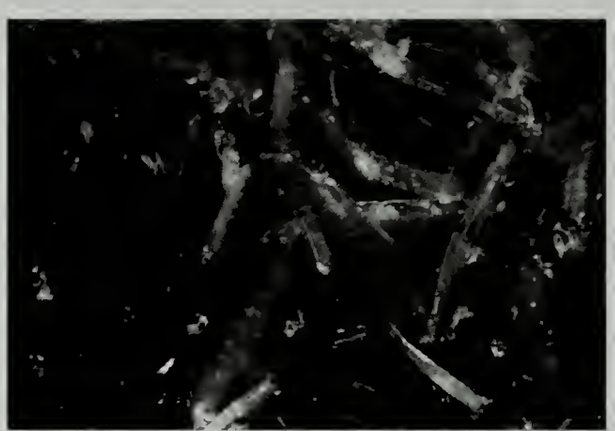
Charles Darwin, in his writings on "The structure and development of coral reefs" (1872) concluded: "In an old standing reef, the corals which greatly differ in kind, are adapted to the stations they occupy and hold their places by a struggle with one another and with external nature". It is now becoming evident today that the most provocative external nature on the Earth is a "Planetary emergence" that is the impact of climate change on our ecosystems and on the very existence of numerous plant and animal species. ASB biologists need to take this as a challenge and ask the fundamental questions: What is it we learned from the great evolutionary biologists of our time? What can we do urgently to reduce or prevent an impending species extinction which climate change is causing?

There is already substantial evidence to prove that there is a clear regime shift taking place in the Antarctic marine ecosystems. For example, the glaciers are melting and ice sheet south of the Antarctic divergence is significantly reduced temporally and spatially. The biomass of ice dependent algae and diatoms in the water masses exhibited decline in the last decade as a consequence of global warming. The entire Antarctic food-chain revolves around the small crustacean Krill (*Euphausia superba*) that is the single food source for penguins, albatrosses, blue and humpback whales, four species of seals (except for the carnivorous Leopard seal that feeds primarily on penguins). In the Antarctic peninsular region, thermal increase of 0.8 C in the last 25 years induced massive reduction in krill biomass and increase in the abundance of salps. If the current warming trend continues, we may witness the extinction of many species the nototheniid fishes that evolved there.

I worked on the physiology of the Antarctic Krill for 10 years and visited the Southern ocean several times to study the krill swarms in the Scotia Sea and Weddell Sea. Larval stages of krill can tolerate temperatures from – 1.8 to + 2 C and any temperature exceeding 2 C is lethal and causes severe mortality in the austral summer when the krill breeds. The krill swarms are massive aggregates

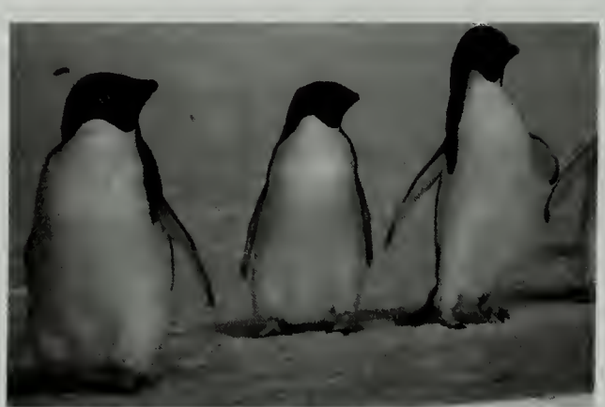
of adult krill with density as much as 30,000 individuals per cubic meter (far denser than any gregarious insects). A single krill swarm is 100 meters wide and a kilometer long, moving majestically displaying spectacular bioluminescence (emitting cold lights of many colors) on the surface of the near-freezing waters of the frigid Southern Ocean. This mind-boggling phenomenon is certainly one of the wonders of the blue Ocean. The social structure of these swarms is still poorly known, unlike what we already know about the social structure of gregarious insects like ants, beetles, wasps and bees.

The Adelie penguin *Pygoscelis adeliae* feeds on krill in the austral summer when these flightless birds come ashore year after year in thousands to establish rookeries as nursing grounds for their chicks. In the last two decades, many of the rookeries are abandoned and lack of krill caused Adelie penguin to dwindle in density. The question arises whether this species of penguin should be treated as an endangered species like the polar bear *Ursus martitimus* in the high Arctic ecosystem?

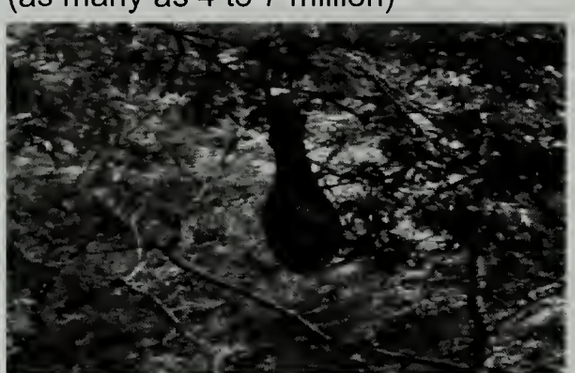


Krill swarm in the Antarctic Seas

Adelie penquin swarms in Antarctica (as many as 4 to 7 million)



Is the Adelie Penguin endangered?



Wild honeybee swarm on a tree branch.

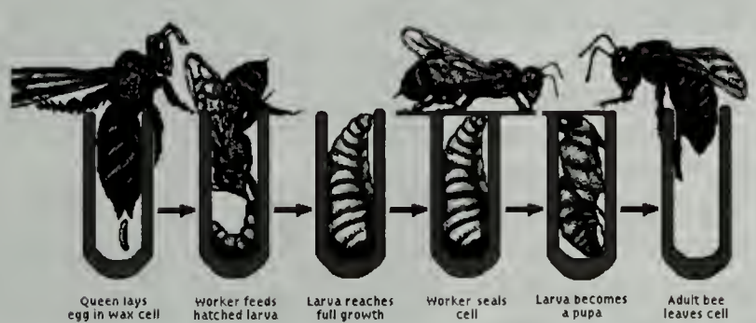
As in the high latitude environments, life in the tropical and temperate environments, both in the ecosystems of aquatic and terrestrial biomes, global warming has introduced invasive species, brought tropical diseases to temperate and boreal latitudes and also threatened biodiversity in the recent decades. The wild honeybee colonies are gradually vanishing. The invasive beetles in the boreal forests are infesting the barks of giant trees that now succumb to these beetle parasites.

According to U. S. Agricultural Department, one third of human diet comes from insect-pollinated plants. The honeybee *Apis mellifera* is responsible for 80%

of the pollination. In recent years, wild honeybee populations are dwindling and this scenario threatens not just the production of honey but also crops like apples, citrus fruit, avocado, soy beans, asparagus, squash, cucumber etc. The recent mysterious death of honeybees by CCD (Colony Collapse Disorder) is a matter of great concern.

Evolutionary biologists wrote about the unique altruism and origin and evolution of eusocial colonial life in insects. A glimpse of this fascinating overarching view of this subject was the most recent paper by the renowned conservation biologist Edward O. Wilson. (One Giant Leap: How insects achieved altruism and colonial life. Bioscience Vol 58: 1-14, 2008). Wilson concludes "the advanced colonial state of eusociality has evolved in insects as a defense of the nest sites within foraging distances of foraging food sources".

In honeybee colony, there are three castes: queens which can only produce eggs; drones or males which mate with new queens and have no stinger; and workers which are the altruists, the non-reproducing females. A fertile queen is able to lay fertilized or unfertilized eggs. Each unfertilized egg contains a unique combination of 50% of the queen's genes and develops into a haploid drone. The fertilized eggs develop into workers or virgin queens. The life span of the queen is about 4 years; drone mates and immediately die; workers live several weeks in the summer. In the figure below (from left to right) the queen bee laying egg; pupae develop; worker bees close the brood chamber and finally the newly born bee emerges out.

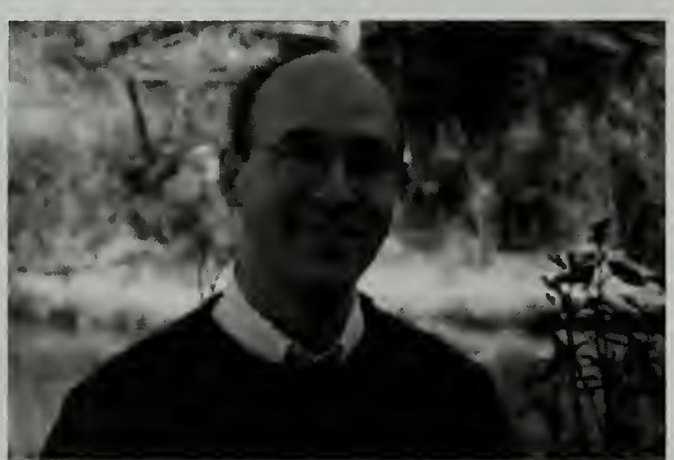

Queen lays egg in wax cell
Worker feeds hatched larva
Larva reaches full growth
Worker seals cell
Larva becomes a pupa
Adult bee leaves cell

Honey Bee Reproduction

Edward O. Wilson (2008, paper cited above) explains that in Hymenopterans insects eusociality is the result of a suite of preadaptations and the selection of tasks according to opportunity. "The only genetic change needed to cross the threshold to eusocial grade is the foundress's possession of an allele that holds the foundress and her offspring to the nest". He also argues that collateral kin selection does not play a significant role. In fact, eusociality, the care across generations of the offsprings of a reproductive caste by a non-reproductive worker caste, is the most advanced level of social life in the insects. In his concluding sentence in this *Bioscience* (2008) paper, Wilson cautions not to get confused between eusocial colonial life of insects (applicable to non-human animal life) and organization human societies. He succinctly states: "Human social behavior arose with different preadaptations, may have been driven by a very different pattern of fundamental selection forces".

The recent book (2007), entitled "The Other Insect Societies" by James T. Costa (Director of the Highland Biological Station in North Carolina) offers a new insight into the discussion of eusocial insects. He argues elegantly that "in trying to solve the puzzle of how highly eusocial behaviors evolved in a few insect orders, evolutionary biologists have neglected the more diverse social arrangements in the remaining twenty-eight orders – the insect societies that did not fit the eusocial schema".

Costa brings to life the marvelous adaptations of non-social insects with a lucid and clear narration of remarkable wonders like "touching tales of cockroach parenting and fidelity", locust clouds larger than the square footage of New England and the caterpillar parades. This parade reminds me of the fascinating and less known "queuing behavior" of another arthropod, the spiny lobster. My former colleague at Florida State University Dr. William Herrenkind in 1969 reported in *Science* (vol. 164: pp 1425-1427) the autumnal mass migrations of spiny lobsters *Panulirus argus* involving diurnal movements of thousands of individuals in single-file queues. The massive aggregations of Alaskan king crabs in thousands in a diurnal rhythm is a phenomenon scientists discovered just recently. If fishermen take advantage of this behavior of king crabs, it poses a threat to the survival of this elegant and commercially important crustacean species.



Dr. Costa and I discussed in the last few months how ASB biologists could make Charles Darwin proud? We felt there is a need for linking the story of evolution with the challenge for preserving the "wonderful and beautiful species" that Darwin praised toward the closing of this epoch-making book "Origin of Species". We have a critical crisis with the ongoing global warming but not yet a catastrophe. Today, we live at a time we see the threats posed by climate change that causes more storms and hurricanes like the devastating *Katrina* in 2005. The sea-level increases will reshape our coastline. The fresh-water Cyprus tree ecosystem is threatened with advancing seawater around them in estuaries along the U. S. East Coast. (Pictured above: Prof. James T. Costa of WCU, NC.)

Ocean acidification with shell-bearing animals like oysters, mussels and hard corals (Scleractinians) in both tropical and deep-sea may disappear from the face of the coast and the seas by 2050, according to leading scientists. Warming of the planet will threaten the high latitude environments with ice-dependent fish, mammals and invertebrates vanishing or driven to near-extinction before the end of this century.

Time has come for ASB biologists to meet this challenge and create public awareness about the impending threats to plants and animals on Earth. Our young students need to be educated about this ongoing ecosystem evolution in the light of climate change. Our elected officials and policy makers must be made

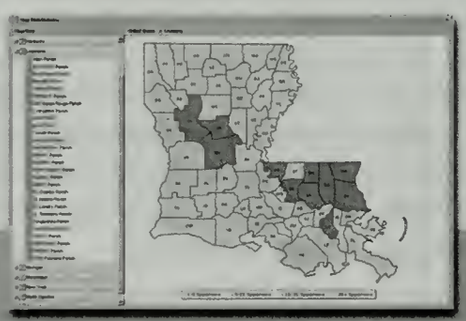
aware of the seriousness of the situation to take precautionary actions and mitigation measures to reduce excessive carbon dioxide emission that is now identified as a culprit for the environmental problems.

Charles Darwin (born on Feb. 12, 1809 on the same day President Abe Lincoln was born), whose bicenntenial will be celebrated in 2009, will be proud if we take prudent actions for conservation and management of our ecosystems. In the southeastern United States, we have the unique opportunity to develop species inventories of our land, coastal and marine ecosystems. We need to establish new marine protected areas (MPAs) and 'National Marine Monuments'. We need to adhere to a new "ecological conscience".

Acknowledgment: I wish to thank Prof. James Caponetti, University of Tennessee, Knoxville for his invitation, inspiration and encouragement that resulted in this article and also influenced me to select the appropriate title recognizing Charles Darwin.

Pictured right: The author in Antarctica with seals! ☙

Silver BIOLOGY

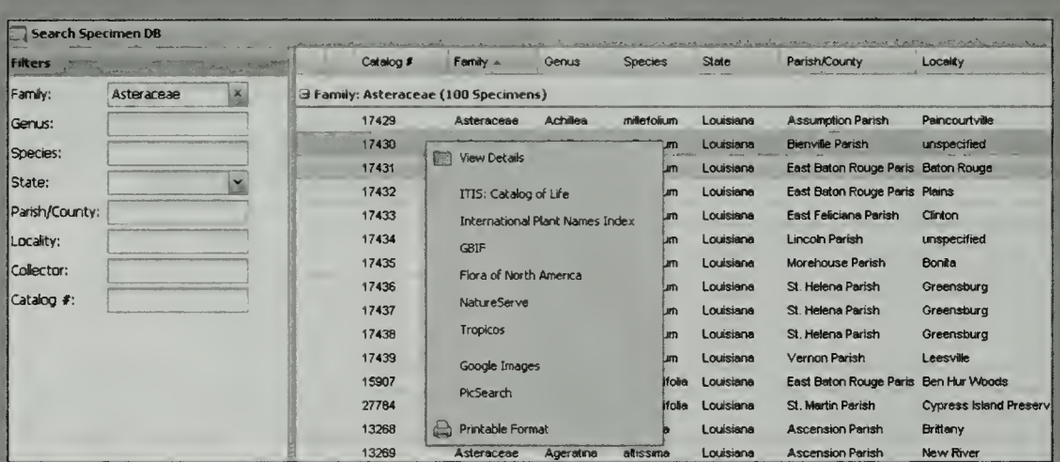


A biodiversity informatics software development company that specialized in online products and custom solutions for biological and natural history collections.

* Interactive Web Applications
* Digital Archiving of Specimen Sheets
* Distribution Maps
* Custom Software Solutions

Silver COLLECTION

Web Portal Software for Biological & Natural History Collections


Search Specimen DB
Filters
Family: Asteraceae
Genus:
Species:
State:
Parish/County:
Locality:
Collector:
Catalog #:
Catalog # | Family | Genus | Species | State | Parish/County | Locality
Family: Asteraceae (100 Specimens)
17429 Asteraceae Achillea millefolium Louisiana Assumption Parish Paincourtville
17430 Louisiana Bienville Parish unspecified
17431 Louisiana East Baton Rouge Paris Baton Rouge
17432 Louisiana East Baton Rouge Paris Plains
17433 Louisiana East Feliciana Parish Clinton
17434 Louisiana Lincoln Parish unspecified
17435 Louisiana Morehouse Parish Bonita
17436 Louisiana St. Helena Parish Greensburg
17437 Louisiana St. Helena Parish Greensburg
17438 Louisiana St. Helena Parish Greensburg
17439 Louisiana Vernon Parish Leesville
15907 Louisiana East Baton Rouge Paris Ben Hur Woods
27784 Louisiana St. Martin Parish Cypress Island Preserv
13268 Louisiana Ascension Parish Brittany
13269 Asteraceae Ageratina altissima Louisiana Ascension Parish New River
View Details
ITIS: Catalog of Life
International Plant Names Index
GBIF
Flora of North America
NatureServe
Tropicos
Google Images
PicSearch
Printable Format

SilverCollection is an interactive web portal for herbaria and other biological collections. It is a client-specific customized application for online access to specimen data. This application provides an interactive solution for curating, searching, and browsing your collection records. ***More info at: collection.SilverBiology.com***

www.SilverBiology.com ***contact@silverbiology.com***

ASB *Southeastern Biology* Staff, ASB Officers, and Executive Committee Members-at-Large, 2008-2009

Telephone numbers, Fax numbers and e-mail addresses can be found on the inside front cover of each issue of the *Southeastern Biology.*

Southeastern Biology Staff

Print Editor	James D. Caponetti, Division of Biology, University of Tennessee, Knoxville, TN
Associate Editor	Nicole T. Welch, Department of Sciences and Math, Mississippi University for Women, Columbus, MS
Web Editor	Dennis C. Haney, Department of Biology, Furman University, Greenville, SC
Business Manager	Tim Atkinson, Carolina Biological Supply Company, Burlington, NC
News Editor	Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA
Book Review Editor	Debbie Moore, Department of Natural Sciences, Troy University, Dothan, AL
Meetings Coord.	Scott Jewell, P. O. Box 1088, Mebane, NC

ASB Officers

President	Thomas R. Wentworth, Department of Botany, North Carolina State University, Raleigh, NC
President-Elect	Patricia B. Cox, Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, TN
Vice-President	Elaine J. Davis, Department of Natural Sciences, Bowie State University, Bowie, MD
Past President	W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W. Canton Ave., Winter Park, FL
Secretary	Nicole T. Welch, Department of Sciences and Math, Mississippi University for Women, Columbus, MS
Treasurer	Tim Atkinson, Carolina Biological Supply Company, Burlington, NC
Membership Officer	Terry D. Richardson, Department of Biology, University of North Alabama, Florence, AL
Database Manager	Deborah Atkinson, School of Public Health, University of North Carolina, Chapel Hill, NC
Archivist	John Herr, Department of Biological Sciences, University of South Carolina, Columbia, SC

Executive Committee Members-at-Large

2009: Donald H. Roush, Dept. of Biology, Univ. of North Alabama, Florence, AL. Robert Wayne Van Devender, Dept. of Biology, Appalachian State University, Boone, NC.

2010: Cathryn H. Greenberg, USDA Forest Service, 1577 Brevard Road, Asheville, NC. Douglas A. Rayner, Dept. of Biology, Wofford College, Spartanburg, SC.

2011: Ronald V. Dimock, Jr., Dept. of Biology, Wake Forest Univ., Winston-Salem, NC. Randall L. Small, Dept. of Ecology & Evolutionary Biology, Univ. of Tennessee, Knoxville, TN.

ASB COMMITTEES 2008-2009

Representatives to Other Societies

AAAS – American Association for the Advancement of Science

Representative: Tim Atkinson, Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215; 336-538-6224; FAX 800-222-7112; tim.atkinson@carolina.com

AIBS – American Institute of Biological Sciences

Representative: Geraldine Twitty, Department of Biology, Howard University, 415 College Street, NW, Washington, DC 20059; 202-806-6953; FAX 202-806-4564; gtwitty@howard.edu

NSCA – Natural Science Collections Alliance

Representative: Alexander Krings, Department of Plant Biology, NC State University, Box 7612, Raleigh, NC 27695-7612; 919-515-2700; FAX 919-515-3436; alexander_krings@ncsu.edu

ASB Committees

Committee for Human Diversity

Chair: Anisha Campbell, Department of Natural Sciences, Bowie State University, 14000 Jericho Park Rd., Bowie, MD 20715; 301-860-3341; acampbell@bowiestate.edu

Jennifer Davis, Department of Biology, Shorter College, Rome, GA 30161; 706-233-7292; jdavis@shorter.edu

Sharryse Henderson, Department of Biology, Georgia Highlands College, Cartersville Campus, 5441 Highway 20, NE, Cartersville, GA 30121; 678-872-8112; FAX 678-872-8098; shenders@highlands.edu

Conservation Committee

Chair: Danny Gustafson, Department of Biology, The Citadel, 171 Moultrie Street, Duckett Hall, Room 301, Charleston, SC 29409; 843-953-7876; FAX 843-953-7264; danny.gustafson@citadel.edu

A. P. Giunta, Blythewood High School, Environmental Science/Chemistry, 10901 Wilson Road, Room 810, Blythewood, SC 29016; 803-691-4090; apgiunta@aol.com

Patricia Sellers, Department of Biology, UNC Pembroke, PO Box 1510, Pembroke, NC 28372-1510; 910-522-5751; FAX 910-521-6649; patricia.sellers@uncp.edu

Education Committee

Chair: Dennis Haney, Department of Biology, Furman University, 3300 Poinsett Highway, Greenville, SC 29613; 864-294-2050; FAX 864-294-2058; dennis.haney@furman.edu

Irene Kokkala, Center for Teaching & Learning, 407 Health and Natural Sciences Building, North Georgia College & State University, 159 Sunset Drive, Dahlonega, GA 30597; 706-864-1868; FAX 706-867-2703; ikokkala@ngcsu.edu

Stephanie Songer, Dept. of Biology, North Georgia College & State University, Dahlonega, GA 30597; 706-864-1959; FAX 706-867-2703; srsonger@ngcsu.edu

Enrichment Fund Board

Chair: Bonnie Kelley, Biology Department, UNC Pembroke, One University Drive, P.O. Box 1510, Pembroke, NC 28372-1510; 910-521-6419; FAX 910-521-6649; bonnie.kelley@uncp.edu

Finance Committee

Chair: Tim Atkinson, Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215; 336-538-6224; FAX 800-222-7112; tim.atkinson@ carolina.com

Past President: W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W Canton Avenue, Winter Park, FL 32789; 407-677-1882; FAX 407-657-7008; Toll Free 800-304-1882; mike@bda-inc.com

President-Elect: Patricia Cox, Tennessee Valley Authority, 400 West Summit Hill Drive – WT11C, Knoxville, TN 37902; 865-632-3609; FAX 865-632-4223; pbcox@tva.gov

Executive Committee Member: Ronald Dimock, Department of Biology, Wake Forest University, Winston-Salem, NC 27109; 336-758-5567; FAX 336-758-6008; dimock@wfu.edu

Ex-Officio - Enrichment Fund Board: Bonnie Kelley, Biology Department, UNC Pembroke, One University Drive, P.O. Box 1510, Pembroke, NC 28372-1510; 910-521-6419; FAX 910-521-6649; bonnie.kelley@ uncp.edu

Graduate Student Support Award Committee

Chair: Michael Wayne Morris, Biological and Environmental Sciences, Troy University, Troy, AL36082; 334-670-3940; mwmorris@troy.edu

Joey Shaw, Biological & Environmental Sciences, University of Tennessee-Chattanooga, 615 McCallie Avenue, Chattanooga, TN 37403-2598; Cell 423-443-9568; joeyshaw@utc.edu

Charles Bryson, Southern Weed Science Research Unit, 141 Experiment Station Road, PO Box 350, Stoneville, MS 38776; 662-686-5259; FAX 662-686-5422; charles.bryson@ars.usda.gov

Local Arrangements Committee

Co-Chair: Ken Marion, Department of Biology, University of Alabama at Birmingham, 1530 3rd Avenue S, Birmingham, AL 35294-1170; 205-934-3582; FAX 205-975-6097; kmarion@uab.edu

Co-Chair: George Cline, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256-782-5798; FAX 256-782-5587; gcline@jsu.edu

Ex-Officio - Meetings Coordinator: Scott Jewell, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; FAX 336-421-3425; a2zconvention@yahoo.com

Membership Benefits Committee

Chair: Terry Richardson, Department of Biology, Box 5048, University of North Alabama, Florence, AL 35632; 256-765-4429; Cell 256-443-9165; FAX 256-765-4430; tdrichardson@una.edu

Patricia Cox, TVA Heritage Program, 400 West Summit Hill Drive – WT11C, Knoxville, TN 37902; 865-632-3609; FAX 865-632-4223; pbcox@tva.gov

Scott Jewell, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; FAX 336-421-3425; a2zconvention @yahoo.com

David Whetstone, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256-782-5215; FAX 256-782-5587; whetstone@cableone.net

Meritorious Teaching Award Committee – Award Sponsored by Carolina Biological Supply Company

Chair: Ronald Dimock, Department of Biology, Wake Forest University, Winston-Salem, NC 27109; 336-758-5567; FAX 336-758-6008; dimock@wfu.edu

Safaa Al-Hamdani, Biology Department, Jacksonville State University, 700 Pelham Road North, Jacksonville, AL 36265-1602; 256-782-5642; FAX 256-782-5587; sah@jsu.edu

Dwayne Wise, Department of Biological Sciences, PO Drawer GY, Mississippi State University, Mississippi State, MS 39762; 662-325-7579; FAX 662-325-7939; daw1@ra.msstate.edu

Nominating Committee

Chair: W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W Canton Avenue, Winter Park, FL 32789; 407-677-1882; FAX 407-657-7008; Toll Free 800-304-1882; mike@bda-inc.com

Past-President's Council

Chair: W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W Canton Avenue, Winter Park, FL 32789; 407-677-1882; FAX 407-657-7008; Toll Free 800-304-1882; mike@bda-inc.com

Patron Member and Exhibitor Committee

Chair: Wayne Van Devender, Department of Biology, Appalachian State University, Boone, NC 28608; 828-262-6907, FAX 828-262-2127; vandevenderr@appstate.edu

Vice-Chair: Randy Small, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN 37996; 865-974-3065; FAX 865-974-3067; rsmall@utk.edu

Past Chair of Local Arrangements Committee: Joe Pollard, Department of Biology, Furman University, 3300 Poinsett Highway, Greenville, SC 29613-0418; 864-294-3244; FAX 864-294-2058; joe.pollard@furman.edu

Vice-President: Elaine Davis, Department of Natural Sciences, Bowie State University, 14000 Jericho Park Road, Bowie, MD 20715; 301-860-3876; edavis@bowiestate.edu

Ex-Officio - Meetings Coordinator: Scott Jewell, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; FAX 336-421-3425; a2zconvention@yahoo.com

Place of Meeting Committee

Chair: Patricia Cox, TVA Heritage Program, 400 West Summit Hill Drive – WT11C, Knoxville, TN 37902; 865-632-3609; FAX 865-632-4223; pbcox@tva.gov

John Herr, Department of Biology, University of South Carolina, Columbia, SC 29208; 803-777-8110; FAX 803-777-4002; herr@biol.sc.edu

Terry Richardson, Department of Biology, Box 5048, University of North Alabama, Florence, AL 35632; 256-765-4429; Cell 256-443-9165; FAX 256-765-4430; tdrichardson@una.edu

Ex-Officio - Meetings Coordinator: Scott Jewell, A2ZConvention Services, PO Box 1088, Mebane, NC 27302; 336-421-0034; Cell 336-213-7373; FAX 336-421-3425; a2zconvention@yahoo.com

Poster Awards Committee – Award sponsored by ASB

Chair: Brian Odom, Biology Department, Wingate University, PO Box 5014, Wingate, NC 28174; 704-233-8237; FAX 704-233-8233; odom@wingate.edu

Lathiena Manning, 11712 S Laurel Drive, Apt. 2A, Laurel, MD 20708; Cell 302-740-0531; lmanningbiology@hotmail.com

Roland Roberts, Biological Sciences, Towson University, 8000 York Road, 341 Smith Hall, Towson, MD 21252-0001; 410-704-3034; rroberts@towson.edu

John Delfino, Midway College, 512 E Stephens Street, Midway, KY 40347-1120; 859-846-5813; jdelfino@midway.edu

Publications Committee

Chair: Donald Roush, Department of Biology, University of North Alabama, PO Box 5181, University of North Alabama, Florence, AL 35632; 256-765-4435; FAX 256-765-4430; dhroush@una.edu

Member-at-Large of the Executive Committee: Cathryn Greenberg, USDA Forest Service, 1577 Brevard Road, Asheville, NC 28806; 828-667-5261, ext. 118; FAX 828-667-9097; kgreenberg@fs.fed.us

Member-at-Large of the Executive Committee: Randall Small, Department of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, TN 37996-1610; 865-974-6207; FAX 865-974-3067; rsmall@utk.edu

Ex-Officio - Print Editor: Jim Caponetti, Division of Biology, M303 Walters Life Sciences Bldg., University of Tennessee, Knoxville, TN 37996-0830; 865-974-6841; FAX 865-974-4057; jcaponet@utk.edu

Ex-Officio - Web Editor: Dennis Haney, Department of Biology, Furman University, 3300 Poinsett Highway, Greenville, SC 29613; 864-294-2050; FAX 864-294-2058; dennis.haney@furman.edu

Research Awards Committee - Senior – Award Sponsored by ASB

Chair: Martin Henry Stevens, Botany Department, Miami University, Oxford, OH 45056; 513-529-4206; FAX 513-529-4243; hstevens@muohio.edu

George Cline, Biology Department, Jacksonville State University, 700 Pelham Road, Jacksonville, AL 36265; 256-782-5798; FAX 256-782-5587; gcline@jsu.edu

Research Awards Committee - Student – Award Sponsored by Martin Microscope Company and Brooks/Cole Cengage Learning

Chair: Tom Pauley, Department of Biological Sciences, Marshall University, Huntington, WV 25755; 304-696-2376; FAX 304-736-1424; pauley@marshall.edu

Ricky Fiorillo, Department of Biology, University of Louisiana at Monroe, Monroe, LA 71209; 318-342-1797; FAX 318-342-3312; fiorillo@ulm.edu

William Ensign, Department of Biology and Physics, Kennesaw State University, Kennesaw, GA 30144; 770-499-3505; FAX 770-423-6625; bensign@kennesaw.edu

Research Awards Committee - Microbiology – Award Sponsored by ASB

Chair: Christi Magrath, Department of Biological and Environmental Sciences, MSCX 312C, Troy University, Troy, AL 36082; 334-670-3622; FAX 334-670-3626; cmagrath@troy.edu

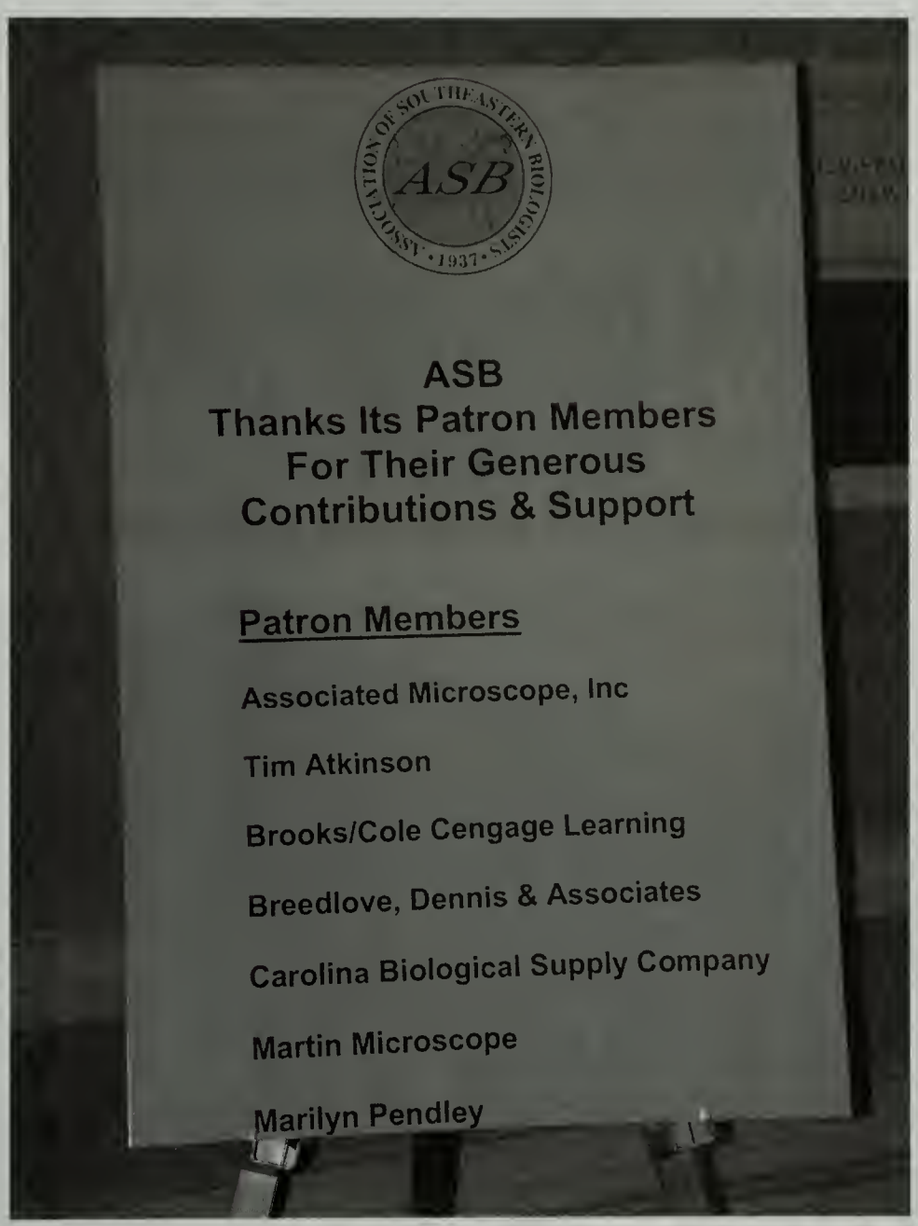
Donald Roush, Department of Biology, University of North Alabama, PO Box 5181, Florence, AL 35632; 256-765-4435; FAX 256-765-4430; dhroush@una.edu

Resolutions Committee

Chair: W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W Canton Avenue, Winter Park, FL 32789; 407-677-1882; FAX 407-657-7008; Toll Free 800-304-1882; mike@bda-inc.com

Wayne Barger, Department of Conservation and Natural Resources, State Lands Division, Natural Heritage Section, 64 Union Street, Montgomery, AL 36130; 334-353-7997; FAX 334-242-0999; wayne_barger@yahoo.com

Constance Lowery, Department of Biology, Catawba College, 2300 W. Innes Street, Salisbury, NC 28144; 704-645-4803; FAX 704-637-4204; clowery@catawba.edu



2009 MEETING OF THE ASSOCIATION OF SOUTHEASTERN BIOLOGISTS

Sheraton Birmingham Hotel
Birmingham, AL
APRIL 1-4, 2009

CALL FOR PAPERS

(this is the only call)

THE 70TH ANNUAL ASB MEETING

HOSTED BY:

THE UNIVERSITY of ALABAMA at BIRMINGHAM
and
JACKSONVILLE STATE UNIVERSITY

UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

JSU

JACKSONVILLE STATE UNIVERSITY™

Please note the following deadlines for our 70th annual meeting. **This will be the only call for papers!**

17 OCTOBER Nominations for ASB officers and executive committee due to the Nominations Committee.

1 NOVEMBER – Electronic submission of Abstracts open

16 JANUARY Titles and abstracts of papers and posters, including those applying for awards, due to the Program Committee. This will be the ***only*** call for papers. They **must** reach the Program Committee by this date.

16 JANUARY– 30 JANUARY
Submission materials for research awards due to respective research awards committees.

30 JANUARY Meritorious Teaching Award materials due to Meritorious Teaching Award Committee. Application for graduate student travel awards due to Graduate Student Travel Awards Committee.

Special note from the Treasurer
If you are submitting an abstract, you know now that you plan to attend the meeting, so PLEASE make sure your membership is up-to-date, then go ahead and register for the meeting as soon as possible. Please do not delay until the last minute when we will have a logjam of people trying to pay membership and register before the deadline!!

LOCAL COMMITTEE ASSIGNMENTS

FOR THE 70TH ANNUAL MEETING
UNIVERSITY OF ALABAMA-BIRMINGHAM, BIRMINGHAM, AL
AND
JACKSONVILLE STATE UNIVERSITY, JACKSONVILLE, AL

Local Arrangements Co-Chairs:	Ken Marion jkmarion@uab.edu	(205) 934-8309
	George Cline gcline@jsu..edu	(256) 782-5798
Program Committee:	George Cline gcline@jsu.edu	(256) 782-5798
	James Rayburn jrayburn@jsu.edu	(256) 782-5803
Field Trips:	Chris Murdock murdock@jsu.edu	(256) 782-8440
	Larry Davenport ljdavenp@samford.edu	(205) 726-2584
Social Events:	Mark Meade mmeade@jsu.edu	(256) 782-5638
	Rob Angus raangus@uab.edu	(205) 934-3582
	Terry Richardson tdrichardson@una.edu	(256) 765-4492
Volunteer Coordinators:	Taba Hamissou taba@jsu.edu	(256) 782-5040
Tri-Beta Coordinators:	Robert Carter rcarter@jsu.edu	(256) 782-5144
Audiovisual Coordinator:	Nicholas Schisler jrayburn@jsu.edu	(256) 782-5803
Silent Auction:	Megan Gibbons mgibbons@bsc.edu	(205) 226-4874
	Pete Van Zandt pvanzand@bsc.edu	(205) 226-7817
	Sharryse Henderson shenders@highlands.edu	(678) 872-8112
Meeting Coordinator:	Scott Jewell a2zconvention@yahoo.com	(336) 421-0034

The Meeting Coordinator handles Commercial Exhibits & Workshops, Registration, Hotel Accommodations, and Transportation.

PAPER & POSTER SUBMISSION DOCUMENTS FOR 2009 MEETING

DEADLINE: FRIDAY, 16 JANUARY 2009

Individuals presenting papers or posters are expected to be members of ASB or an affiliate society!

INSTRUCTIONS FOR SUBMITTING ABSTRACTS

You must submit your abstracts online through the ASB website (http://www.asb.appstate.edu/) **or** directly using the following address: http:/www.alabamaacademyofscience.org/asb/

Your 250-word abstract must not contain any special characters or formatting that cannot be rendered in a plain text editor. It is recommended that you first create your abstract using a plain text editor such as Notepad or Vim prior to copying the abstract into the appropriate field on the submission form. For scientific names that should be italicized, please place an * before and after the word(s) to be italicized. Here is an example: the scientific name for the American Alligator is *Alligator mississippiensis*.

On the electronic submission form you will be prompted to provide the following information items:

AUTHOR(S)

INSTITUTION(S)

FIRST AUTHOR PHONE/FAX

FIRST AUTHOR E-MAIL

ABSTRACT TITLE

PRESENTATION TYPE: PAPER or POSTER

NOTE: All oral presentations must be in **MS PowerPoint 2003** with a backup copy on a CD disk or USB memory drive. Slide projectors will not be available. Poster space is 46" x 46". Bring your own pins or Velcro.

CHOOSE THE APPROPRIATE SECTION(S) TO WHICH YOUR PAPER OR POSTER SHOULD BE ASSIGNED. IF YOU CHOOSE MORE THAN ONE, RANK SECTIONS AS TO YOUR PREFERENCE (1 = MOST PREFERRED).

Animal Behavior
Animal Ecology
Animal Physiology
Aquatic, Wetland & Marine Mgmt.
Developmental Biology
Genetics, Cell & Molecular Biology
Herpetology
Ichthyology
Invertebrate Zoology & Entomology
Microbiology
Ornithology
Parasitology
Plant Biology
Plant Ecology
Plant Systematics
Teaching Biology

AWARDS: If you intend to apply for one of the following awards, you **must indicate this to the Program Committee during the abstract submission** so that talks can be scheduled appropriately. Students must be first author to be considered for student awards. Applicants must be present at the Awards Banquet to be considered for an ASB award.

For most awards, you **MUST** also submit an abstract to the award committee chairperson. Please see applicable rules for each award at www.asb.appstate.edu/2009_Meeting_Awards.php and in this issue. If you do not follow these instructions, you will not be considered for the award.

ASB Senior Research Award ($1,000). Sponsored by ASB.
ASB Student Research Award ($1,000). Sponsored by Martin Microscope Company.
Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology ($200). Sponsored by Brooks/Cole Publishing Company.
ASB Research Award in Microbiology ($500). Sponsored by ASB.
ASB Student Poster Award ($300). Sponsored by ASB.
Eugene P. Odum Award ($500). Sponsored by the SE Chapter of ESA.
Elsie Quarterman-Catherine Keever Award ($300). Sponsored by the SE Chapter of ESA.
NC Botanical Garden Award ($200). Sponsored by the NCBG.
SEASIH Student Travel Awards ($50). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.
SEASIH Student Ichthyology Award ($100). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.
SEASIH Student Herpetology Award ($100). Sponsored by the SE Chapter of ASIH. See http://www.asih.org.
SAC/SWS Student Travel Awards ($100). Sponsored by the SA Chapter of SWS.
BSA Student Plant Science Paper Award ($300) and Poster Award ($300) plus travel expenses. Sponsored by the SE Section of BSA.

INSTRUCTIONS FOR SUBMITTING ORAL PRESENTATIONS

All oral presentations will be done using Microsoft PowerPoint 2003 only. **Complete and final presentations must be submitted ONLINE (http://www.asb.appstate.edu/) to the audiovisual coordinator to be received by March 23, 2009. On-line submission will begin February 13.** Presenters should bring a backup copy on a CD or USB memory drive.

For questions contact **Dr. James Rayburn, Biology Department, Jacksonville State University, 700 Pelham Road North, Jacksonville, AL 36265-1602 (256)782-5803 jrayburn@jsu.edu.**

ASB 2009 FIELD TRIPS

North Central Alabama is located near the end of the Appalachian Chain and adjacent to the Upper Coastal Plain. Thus, the area is mixing zone for flora and fauna. The 2009 field trips should highlight its diversity. All field trips will be on Saturday, April 4. The list of field trips below is tentative. More information will be available in the January issue of *SE Biology*.

1. ***Botanical Diversity Field Trip**, Jefferson and Shelby Counties, AL.* 8:00 AM-12:00PM. Trip Leader: Larry Davenport, Samford University. Seasonal wildflowers and woodland plants of Central Alabama.

2. ***Birmingham Botanical Gardens**, Birmingham, AL.* 8:00 am - 12:00 pm. Trip leader: Dan Jones, University of Alabama, Birmingham. A tour of the gardens. Unusual collections will be highlighted.

3. ***Birding/Salamander Field Trip**, Ruffner Mountain Nature Center, Birmingham, AL.* Time:. Trip leaders: Megan Gibbons and Scott Duncan, Birmingham Southern College. A natural history trip, emphasizing birds and salamanders, to the 1,000 acre nature preserve in the heart of Birmingham.

4. ***Ichthyology Field Trip**, Cahaba River and/or tributaries, Jefferson and Shelby County, AL.* 8:00 am-12:00 pm. Trip leader: Bob Stiles, Samford University. The rich ichthyological diversity of the Cahaba River. Sampling site selection dependent on water levels.

5. ***Little River Canyon Herpetological/ Botanical Field Trip**, Little River Canyon, DeKalb and Cherokee Counties, AL.* Time 8:00 AM-3:00 PM. Trip leaders: Chris Murdock, Jacksonville State University, and Wayne Barger, Alabama State Botanist. A natural history tour of the Little River Canyon National Preserve, one of the most spectacular canyons in North America. This area is rich in amphibians and reptiles and contains scattered colonies of the Green Pitcher plant, *Saracenia oreophila*, A tour of the Little River Canyon Interpretive Center will also be included.

ACTIVITIES FOR GUESTS

Attendees and family members will find many interesting places to visit in the Birmingham area. Within walking distance of the Sheraton are the Birmingham Civil Rights Institute, which documents the history and struggles of the civil rights movement throughout the years, and the Birmingham Museum of Art, particularly noted for its collection of art depicting the exploration of the western United States. The McWane Center has many interactive activities for children and a world-class IMAX theater. Within ten minutes traveling time from the Sheraton are the Birmingham Botanical Gardens and the Birmingham zoo. April will be a particularly good time to view the spring flowering at the Gardens. The zoo has some new exhibits featuring Alabama animals. For a taste of the history of Birmingham, there is the Vulcan Statue and Sloss Furnace. Vulcan is the largest cast iron statue in the world and depicts the Roman god of fire and forge. It commemorated Birmingham's history of iron and steel production at the 1904 World's Fair. Sloss Furnace preserves the processes and methods of making iron during the last century. An hour and a half drive east of Birmingham is the Anniston Museum of Natural History. This museum features African animals, including a life-size elephant mount and a baobab tree, and life-size dinosaurs.

Announcing the ASB
Thursday Night Social
"Sweet Home Alabama....."

Some say that a meeting is judged by the success of the Thursday Night Social. We hope to maintain a longstanding tradition of music and dancing and entertainment that will give you a break from the work of the meeting. Back this year, by popular acclaim, are the Midnighters, a dance band from Muscle Shoals, Alabama, that features a variety of music from soul to classic rock. Attendees of the 2005 University of North Alabama meeting will have fond memories of this band.

More details will be found in the January issue of SE Biology.

Silent Auction

_____ Yes I would like to contribute to the Silent Auction to help with student travel to the Annual Meeting.
(100% of all proceeds to benefit student travel awards)

Partial List of Items Donated at the 2007 Annual Meeting in Columbia

Dissection Set
Corporate Gift Certificates
Heart Model
Dinner for Two
Two Nights Hotel Accommodations
Books
Charts
Gift Basket
Educational Charts
Microscope
IPod

Description of Item(s) to be donated

_____
_____
_____
_____
_____
_____
_____
_____

Please check appropriate option:
____ Please contact me at the conference to pick-up donation
____ I will mail the donation to Scott Jewell, ASB Meeting Coordinator before March 15, 2009.

_____
Signature Date phone

_____
Title e-mail

Return form by **March 15, 2009** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

Workshop Form

2009 Association of Southeastern Biologists
April 1-4, 2009 Birmingham, AL

Workshop Description: All commercial workshops will be conducted during the meeting on a first-come first-served basis. Classroom style seating will be provided at no additional charge to the presenter. Each classroom will be set for a minimum of 50 participants. A screen will be provided for each room. **LCD projectors and laptops will not be provided. One workshop per application please.**

Company/Organization_____
(Please list company name as you wish it to appear on printed materials)
Presenter_____ Email _____
Address: _____
Contact
Address:_____
_____
Telephone:_____
Fax: _____ web site:_____
Workshop
Title:_____
50 Word Workshop
Description:_____
_____
_____
_____
(Description will appear in Final Program of Southeastern Biology)

Please indicate which time slot you prefer below:

Pre-Conference Workshop: Wed 4pm-5:30pm _____

Thurs 8:30am-10am___ Thurs 10:30am-12noon___ Thurs 1:30pm-3pm___
Thurs 3:30pm-5pm___ Fri 8:30am-10am___

Deadline for workshop submission is 14 October 2009

Hold Harmless Clause

The workshop presenter assumes all responsibility and liability for losses, damages and claims arising out of injury to the presenter's display, equipment and other property brought upon the premises of the convention facilities and shall indemnify and hold harmless the association agents, servants and employees as well as the ASB organization from any losses, damages and claims.

Upon acceptance by ASB, this signed application and Workshop Contract form becomes the contract for the 2008 ASB Annual Convention. Workshop presenter will be notified of their acceptance by letter no later than 15 Dec 2007.

_____
Signature Date

Return form by **October 14 2009** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

Industry Partners Form

2009 Association of Southeastern Biologists
April 1-4 2009 Birmingham, AL

__Yes I Would Like To Partner With ASB And Participate
In the Industry Partners Program!!
Send no money now, please complete form and return to address shown below

Company/Organization_____
(Please list company name as you wish it to appear on printed materials)
Representative:_____ Email _____
Address:_____
City,State,Zip:_____
Telephone:_____Fax:_____

*Special Recognition at the Thursday Night Social, Friday Night Awards Banquet, signage at the Convention Center and a listing in Final Program of Southeastern Biology!

Qty	Item	Amount
_____	Wed Night Cash Bar (4 Opportunities)	$500/opportunity
_____	Coffee Breaks (8 Opportunities)	$500/opportunity
_____	Cyber Café & Marketing Survey	$750/opportunity
_____	Thurs Night Social (4 Opportunities)	$900/opportunity
_____	Fri Night Banquet Cash Bar	$850
_____	Yes I wish to present a workshop	See Workshop Form
_____	24 Hour Exhibit Hall Security	$1,000
_____	ASB Executive Committee Breakfast	$350
_____	Yes I would like to Donate an Item to the Silent Auction to help with Student Travel	See Silent Auction Form
_____	ASB Web Site Hot Link to Your Company (12 months)	$375
_____	Yes I would like an AD in all 4 2008 issues of Southeastern Biology, (circle choice) ¼ page=$200, ½ page=$325, full page=$425	See Advertising Form
_____	AD in Final On Site Program (circle choice) ¼ page=$175, ½ page=$225, full page=$275	See Advertising Form

Signature _____ Date _____

Title _____ e-mail _____

Return Form with Check or Credit Card Information by **February 1, 2009** to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

Advertise With The Association of Southeastern Biologists

Reach Your Target Audience and Promote your Products and Services Throughout the Year!!

Advertise in Southeastern Biology!!

Advertise in Southeastern Biology and reach over 1,500 members from 40 states and 13 countries. ASB publishes four issues of Southeastern Biology per year and an on-site Program for the Annual Meeting. Choose either or both of these opportunities to increase your marketing exposure. Promote your products and services throughout the year!

Ad Sizes

¼ Page Ad	1½" x 1"
½ Page Ad	3" x 2"
Full Page Ad	7½" x 4 ¾"

ADVERTISING ORDER FORM

_____ Ad in all 4 issues of Southeastern Biology (circle choice)

¼ page = $200, ½ page = $325, full page = $425

_____ Ad in Final On Site Program (circle choice)

¼ page = $175, ½ page = $225, full page = $275

*All ads are black and white and must be submitted in pdf.

Signature Date

Title phone e-mail

___Visa __MasterCard __Discover

CC# _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Exp __/__ 3 digit code on back of credit card ___/___/___

Name As It Appears On Card_____

Credit Card Billing Address
*Last Name_____ *First Name_____

***Company/Organization_____**

***Address_____**
***Line 2_____**
***City_____ *State_____ *Postal Code_____**
***Phone _____**

Office Use Only

Paid with check #_____ on Date_____ Rec'd by:_____

Paid with credit card # _____ on Date:_____ Rec'd by_____
Confirmation Sent on Date:_____ via_____

Return form with check or credit card information to: Scott Jewell, ASB Meeting Coordinator, PO Box 1088, Mebane, NC 27302; A2Zconvention@yahoo.com, 336/213-7373 cell, 336/421-0034 office, 336/421-3425 fax.

SPECIAL REMINDERS FROM THE PRINT EDITOR

ASB BANQUET ATTENDANCE

Please keep in mind that recipients of ASB awards must be present at the annual ASB banquet to receive the award. Therefore, all applicants for ASB awards must attend the banquet to insure the presence of the winners.

MEMBERSHIP UPDATE

Please make sure your membership status is up-to-date amply before the deadline for abstract submission and for annual meeting registration. Please be aware that mailing a check or money order for membership renewal to the treasurer and then trying to register online or by mail for the annual meeting on the same day does not work. Moreover, trying to pay for membership renewal online in tandem with registering for the annual meeting online does not work well either.

EXTRA ABSTRACT SUBMISSION

Besides sending abstracts of papers and posters to the Program Committee by January 16, 2009, anyone wishing to be considered for an award must send an abstract to the respective award committee chairperson in order to be considered. Checking the box on the registration form for the award is not enough. An abstract must be sent to the chairperson by January 30, 2009.

INSTRUCTIONS FOR SUBMITTING ORAL PRESENTATIONS

All oral presentations will be done using **Microsoft PowerPoint 2003** only. Presenters should bring a backup copy on a CD or USB memory drive. **Complete and final presentations must be submitted on-line to the ASB website by 23 March.**

For questions contact **Dr. James Rayburn, Biology Department, Jacksonville State University, 700 Pelham Road North, Jacksonville, AL 36265-1602 (256) 782-5803 jrayburn@jsu.edu.**

Nomination for ASB Officers and Executive Committee Positions

DEADLINE: 17 OCTOBER 2008

To members of the Nominating Committee: I wish to suggest that you consider the following ASB member(s) in selecting nominees for officers and executive committee positions. (***Please include the institutional address of each nominee***.)

VICE-PRESIDENT_____

_____

_____

_____

_____

EXECUTIVE COMMITTEE (*two will be elected for three-year terms*)

_____

_____

_____

_____

_____

_____

_____

MAIL TO: Dr. W. Michael Dennis, Breedlove, Dennis and Associates, Inc., 330 W. Canton Avenue, Winter Park, FL 32789; (407) 677-1882; Fax (407) 657-7008; Toll Free (800) 304-1882; mike@bda-inc.com.

NAME & ADDRESS OF NOMINATOR _____

_____

_____

_____

BRINGING AUTHENTIC
INQUIRY TO SCIENCE
INSTRUCTION

Thought-provoking educational modules and professional development on:

- Biotechnology
- Image Analysis
- Environmental Science
- Environmental Health Science
- GIS and GPS
- Neuroscience
- Ocean Science
- Volumetric Image Analysis

SCIENCE APPROACH

(520) 322-0118

www.science-approach.com

SUPPORT AWARDS FOR GRADUATE STUDENT MEMBERS OF ASB

DEADLINE FOR POSTMARK: 30 JANUARY 2009

Limited funds are available to partially defray the expenses of graduate students attending the Annual Meeting. **The awards are for lodging and meals only, including the ASB Banquet.** Departments are urged to provide transportation for their graduate students. Recipients must be members of ASB. See ASB web site for membership application or renewal forms. The guidelines for application are as follows:

(a) The recipient is a current member of ASB.

(b) The recipient must be presenting a paper or poster at the Annual Meeting and must include a separate copy of the abstract of the paper or poster to be presented along with the application.

(c) The recipient must be currently enrolled as a graduate student in the department where he/she conducted this research.

(d) Student travel awards are granted on a competitive basis. Applicants must document expected expenses and list other sources of financial support for this meeting, including institutional aid, shared lodging and shared transportation.

(e) In a paragraph, give a brief history of your education to date: indicate how many years you have been in graduate school and the expected date of completion of work for your degree, your major field of study and research, publications, including those in press and in preparation, degree sought, name of major professor and any other pertinent details.

(f) Give your source(s) of support while in graduate school: e.g. NSF, NIH, USDA, Teaching Asst., Research Asst., etc.

(g) Include a letter of recommendation for an ASB support award from your faculty research advisor. This letter should comment on the work being presented and indicate the financial need of the student presenter. It should also indicate whether any departmental or other funding is available to the student.

(h) Send application with supporting letter to: Dr. Michael Wayne Morris, Department of Biological and Environmental Sciences, Troy University, Troy, AL 36082; 334-670-3940. In addition, e-mail a copy of your completed application documents without the supporting letter to mwmorris@troy.edu.

(i) Applicants will be notified of the decision of the Committee as soon as is practical. Recipients of the award will pick up their checks at the ASB table at the meeting.

GUIDELINES FOR POSTER PRESENTATIONS

Poster sessions have been incorporated as a regular means of scientific presentation at the annual ASB meetings. This type of presentation provides a more informal environment that encourages a direct interchange of ideas and discussion between presenter and audience. Poster presentations are open to all ASB members. Adherence to the following guidelines helps ensure the effectiveness of the poster presentation and consideration for the award.

(1) Display should fit on a 46" h x 46" w board suitable for thumbtacks, pushpins, or Velcro.

(2) Poster must be displayed from 10 a.m. Thursday through 5 p.m. Friday. Authors will be required to be present at specified times during the Annual Meeting.

(3) Poster should be carefully planned to maximize clarity and simplicity in conveying information.

(4) Poster should have a heading, including a title, author, and author's institution(s). This heading should be placed at the top in letters no less than **3 cm** high.

(5) The body of the poster, including text, figure legends, and table captions, should be in type no smaller than **18 pt (3-4 mm)** and *must* be legible from a distance of about 1-2 meters.

(6) The body should be self-explanatory and should include figures, tables, graphs, maps, or photographs displayed in a well organized, coherent, and easy-to-follow sequence from top to bottom. Each illustration should contain a caption. *Do not overcrowd the display*. Significance will be one of the criteria looked for in judging the posters.

(7) A limited degree of text may be included, but care should be taken not to overwhelm the audience.

(8) A large, abbreviated version of the abstract should be presented at the top of the poster, but below the heading. A clear listing of specific conclusions should appear at the bottom or end of the presentation. An abstract must also be submitted to the award committee chair.

Further inquiries may be directed to the **Chair of the ASB Poster Award Committee**: Dr. Brian Odom, Biology Dept., Wingate University, P. O. Box 5014, Wingate, NC 28174; 704-233-8237; fax 704-233-8233; odom@wingate.edu.

RESEARCH AWARDS

SPECIAL NOTICE: Please read carefully the description of requirements for the ASB award for which you apply. Note especially that recipients of ASB awards must be present at the annual ASB banquet to receive the award.

ASB Senior Research Award ($1000)

Given for an especially meritorious manuscript presented orally by the senior author at the annual meeting of ASB (or co-author under exceptional circumstances if the senior author cannot attend). The award applicant must be senior author on both the manuscript and oral presentation, and the presenter must be a member of ASB. In order to qualify for this award, sponsored by ASB, the senior author (or a representative) must have presented work orally at any previous annual meeting or have submitted an abstract by the 16 January abstract deadline for an oral presentation at the next annual meeting. The manuscript must either have been submitted for publication or be ready for submission and carry the format of the journal to which it will be (or has been) submitted. Author(s) may submit their papers electronically by emailing them to the committee chair (pdf preferred). Include a short (1 page maximum) biography of the award applicant. If sent by hardcopy, submit three copies of the manuscript and biographical sketch. Manuscripts received by 30 January 2009 will compete for the 2009 Senior Research Award. Manuscripts not received by this deadline (but submitted by the next year's deadline) will remain in competition for the 2009 Senior Research Award. However, such manuscripts cannot have been published prior to the last annual meeting. Judges will use a standard evaluation form that includes the following criteria: significance of ideas, soundness of hypotheses, originality (creativity), quality of methodology, validity of results, soundness of conclusions, clarity, completeness, organization, and contribution to the field. Review papers, if submitted, should contain new information, such as novel syntheses from existing data, or an original contribution that extends our knowledge of the field, rather than just a review of existing literature. At the discretion of the Senior Research Award Committee, the award may be withheld or it may be split in case of a tie. *The recipient of the award must be present at the annual ASB banquet to receive the award.*

Committee Chair: Dr. Martin Henry Stevens, Botany Dept., Miami University, Oxford, OH 45056; 513-529-4206; fax 513-529-4243; hstevens@muohio.edu.

ASB Student Research Award ($1000)

Given for an especially meritorious manuscript presented orally by the author(s) at the annual meeting. To be eligible for the Student Research Award (sponsored by **Patron Member Martin Microscope Company**), the recipient must be the senior author on the manuscript, and must be a graduate or undergraduate student at the time of presentation. To qualify for the award, the author(s) must submit an **abstract** to the current Student Research Award Committee Chair (posted on the website), due the same date as abstract submission to the program committee for presentations or posters (specified in

the official call for papers). **Complete applications for the competition must be received by the Student Research Award Committee Chair by January 30th** prior to the annual meeting. Complete applications include (1) Three copies of a journal-ready manuscript. Papers may be in press, or published after the previous ASB annual meeting, but not prior; (2) abstract in same format as submitted for the ASB call for papers, including author names, titles, and contact information; (3) biographical sketches of each author. These materials may also (in addition to hardcopy) be sent by email to the committee chair. Judges will evaluate the manuscripts based on significance of ideas, soundness of hypotheses, originality, methodology, validity of results, soundness of conclusions, clarity, completeness, organization, and contribution to the field. At the discretion of the Student Research Award Committee, the award may be withheld or it may be split in the case of a tie. ***Only members of the ASB are eligible and the recipient of the award must be present at the Annual ASB Awards Banquet to receive the award.***

Committee Chair: Dr. Tom Pauley, Dept. of Biological Sciences, Marshall University, Huntington, WV 25755; 304-696-2376; fax 304-736-1424; pauley@marshall.edu.

Brooks/Cole Cengage Learning Student Research Award in Aquatic Biology ($200)

The purpose of this award, sponsored by **Patron Member Brooks/Cole Cengage Learning**, is to encourage excellence in aquatic biology research by undergraduate and graduate students. It is intended that "aquatic biology" be broadly interpreted. For example, research projects on aquatic organisms, wetland biota, and water quality are eligible. To be eligible for the Student Research Award in Aquatic Biology, the recipient must be the senior author on the manuscript, and must be a graduate or undergraduate student at the time of presentation. The paper must be based on research designed and completed by the student, and must be presented orally by the student as senior author at the annual meeting. To qualify for the award, the author(s) must submit an **abstract** to the current Student Research Award Committee Chair (posted on the website), due the same date as abstract submission to the program committee for presentations or posters (specified in the official call for papers). **Complete applications for the competition must be received by the Student Research Award Committee Chair by January 30th** prior to the annual meeting. Complete applications include (1) Three copies of a journal-ready manuscript. Papers may be in press, or published after the previous ASB annual meeting, but not prior; (2) abstract in same format as submitted for the ASB call for papers, including author names, titles, and contact information; (3) biographical sketches of each author. These materials may also (in addition to hardcopy) be sent by email to the committee chair. Judges will evaluate the manuscripts based on significance of ideas, soundness of hypotheses, originality, methodology, validity of results, soundness of conclusions, clarity, completeness, organization, and contribution to the field. At the discretion of the Student Research Award Committee, the award may be withheld or it may be split in the case of a tie.

Only members of the ASB are eligible and the recipient of the award must be present at the Annual ASB Awards Banquet to receive the award.

Committee Chair: Dr. Tom Pauley, Department of Biological Sciences, Marshall University, Huntington, WV 25755; 304-696-2376; fax 304-736-1424; pauley@marshall.edu.

ASB Research Award in Microbiology ($500)

Sponsored by ASB, the award is given for an especially meritorious oral presentation of research results by the author(s) at the annual meeting. The purpose of the award is to stimulate greater participation at the Annual Meeting in the broad area of microbiology, principally prokaryotic microbiology. The research may involve cell biology, physiology, molecular biology and/or genetics of these organisms, but must clearly be about the organisms and not the disciplines. The presentation must deal clearly with prokaryotic microbes and should represent substantially completed work. In order to qualify for this award, the senior author must request consideration for the award on the abstract submission form, submit one copy of the title and abstract to the ASB Program Chair by 16 January 2009, and submit a second copy by the same date to the Microbiology Award Committee Chair. Only members of ASB are eligible and the recipient of the award must be present at the Annual ASB Banquet to receive the award (go to http://asb.appstate.edu/member.htm for membership application or renewal form).

Committee Chair: Dr. Christi Magrath, Dept. of Biological and Environmental Sciences, MSCX 312C, Troy University, Troy, AL; 36082; 334-670-3622; fax 334-670-3626; cmagrath@troy.edu.

ASB Student Poster Award ($300)

Given for an especially meritorious poster presentation by the author(s) at the Annual Meeting. The purpose of the award, sponsored by ASB, is to stimulate greater student participation at the Annual Meeting. To qualify for this award, the senior author **must be a graduate or undergraduate student at the time of presentation, must be a member of ASB, must submit an abstract by the 16 January 2009 deadline, and must be present at the Annual ASB Awards Banquet**. Student poster presentations must also adhere to the "Guidelines for Poster Presentations." Only student authors who request consideration for the poster award on the abstract submission form will be judged for the award. In addition to adherence to the "Guidelines for Poster Presentations," student poster presentations will also be judged using the following specific criteria:

(1) Overall aesthetics and attractiveness of presentation
(2) Ease of reading from a distance (1-2 meters)
(3) Clear and concise organization
(4) Clearly stated hypothesis or study objectives
(5) Soundness of methods for testing hypotheses or meeting study objectives
(6) How well conclusions are supported by results

At the discretion of the ASB Poster Award Committee, the award may be withheld or it may be split in the case of a tie. Some posters may also be awarded "Honorable Mention" at the discretion of the ASB Poster Award Committee (Honorable Mention awardees receive no monetary award). Further inquiries may be directed to the chair of the ASB Poster Award Committee.

Committee Chair: Dr. Brian Odom, Biology Dept., Wingate University. P. O. Box 5104, Wingate, NC 28174; 704-233-8237; fax 704-233-8233; odom@wingate.edu.

Eugene P. Odum Award ($500)

Given by the Southeastern Chapter of the Ecological Society of America, for the best ecological paper presented orally by a student. The paper must deal with a clearly ecological topic and should represent essentially completed work. Undergraduate and graduate students are eligible, and the student must be the sole or senior author. Students may not compete for the Award in successive years with the same project, and may not compete simultaneously for the Odum Award and the Quarterman-Keever Award in the same year. Previous Odum Award winners are ineligible. Submit a copy of the paper title, abstract, and author information to the ASB Program Chair by the "Call for Papers" deadline of 16 January 2009, and send a second copy to the Odum Award Committee Chair by the same deadline.

Committee Chair: Dr. Joel Gramling, Department of Biology, 214 Duckett Hall, The Citadel, 171 Moultrie St., Charleston, SC 29409; 843-953-6459; fax 843-953-7264; joel.gramling@citadel.edu.

Elsie Quarterman-Catherine Keever Award ($300)

Given by the Southeastern Chapter of the Ecological Society of America for the best ecological poster presented by a student. This award was presented for the first time in 2005. Undergraduate and graduate students are eligible. The student must be the sole or senior author. The poster must deal with a clearly ecological topic and should represent substantially completed work. It should be presented in a regular contributed poster session. Students may not compete for this award in successive years with the same project. Students may not compete simultaneously for the Elsie Quarterman-Catherine Keever Award and the Odum Award in the same year. One copy of the title and abstract should be sent to the ASB Program Chair by the "Call for Papers" deadline of 16 January 2009 and a second copy must be sent via email by the same date to the Quarterman-Keever Committee Chair.

Committee Chair: Dr. James Luken, College of Natural and Applied Sciences, Coastal Carolina University, P.O. Box 261954, Conway, SC 29528-6054; 943-349-2235; Fax 843-349-2926; joluken@coastal.edu.

The North Carolina Botanical Garden Award ($200)

Given by NCBG (through the Southeastern Section of the Botanical Society of America and the Southern Appalachian Botanical Society). This is awarded for a paper presented at the annual ASB meetings that best advances our understanding of the biology and conservation of the southeastern plants and thus contributes to the mission of the North Carolina Botanical Garden. Of special interest to the Garden are the rare plant species of the Southeast: why they are rare; how they interact with plants, animals, and their environment; and what can be done to ensure their survival. The paper may deal with a broad area including systematics, ecology and conservation. All individuals who are eligible to present at the ASB meetings are eligible for this award. They may be students, faculty or others.

Committee Chair: Dr. John Randall, Department of Biology, University of North Carolina, Greensboro, NC 27412; 919-962-0522; fax 919-962-3531; jrandall@email.unc.edu.

Society of Wetland Scientists South Atlantic Chapter Student Travel Award

The South Atlantic Chapter of the Society of Wetland Scientists (SWS) will again offer its student travel award to support students presenting wetland research at the ASB annual meeting. We will award at least $100 to a maximum of five students. The Chapter's Awards and Executive Committees will judge the applicants based on the scientific quality and importance of their research as described in the abstract. All students presenting research on a wetland topic are eligible; membership in SWS is not required. Please check the appropriate box on the ASB registration form and submit the abstract as instructed in the ASB call for papers. Further, applicants must also submit their abstract, by electronic mail, to **Dr. David E. Bailey at debailey@dot.state.nc.us, at the same time the abstract is submitted to ASB.** Award winners will be invited to the Chapter's luncheon meeting (no charge for awardees) held during the ASB annual meeting. Dr. Bailey's address: North Carolina Department of Transportation, PDEA/Natural Environment Unit, 1598 Mail Service Center, Raleigh, NC 27699-1598; 919-715-7257; fax 919-715-5501.

Botanical Society Of America Southeastern Section Student Awards

Two awards: A $300 cash prize for the best paper and a $300 cash prize for the best poster in plant science presented at the annual meeting of ASB. In addition, each winner will receive funds towards travel to the annual BSA meeting as well as one year's membership in BSA. These are awards for papers and posters in botany in its broadest sense including fungi and algae as well as plants.

Who is eligible: Undergraduate and graduate students are eligible. The student must be the sole or senior author of the paper or poster.

How to apply: To be included in the competition, applicants should e-mail their abstract to the Botanical Society of America Southeastern Section Student Award committee chair by the abstract deadline of 16 January 2009. The winner will be announced at the ASB Banquet.

Committee Chair: Dr. Lytton John Musselman, Department of Biological Sciences, Old Dominion University, Norfolk, VA 23529-0266; (757) 683-3595; Fax (757) 683-5283; cell (757) 434-0982; lmusselm@odu.edu.

For the award requirements of other ASB affiliates, visit their respective web site:

American Society of Ichthyologists and Herpetologists—http://www.asih.org/
Southeastern Microscopy Society—http://www.semicroscopy.org
Southern Society of Parasitologists—http://asp.unl.edu
Southern Appalachian Botanical Society—http://www.sabs.appstate.edu/index.htm

George Cline (left) and Ken Marion (center) invite the Friday night awards banquet audience to next year's annual meeting in Birmingham, Alabama. Michael Dennis (right) looks on approvingly.

Honor Thy Teacher!
ASB Meritorious Teaching Award
Deadline January 30, 2009

Each year the Association of Southeastern Biologists recognizes one of its members for especially meritorious teaching. Carolina Biological Supply Company, Burlington, North Carolina, generously sponsors this $1500 award, which will be presented together with a plaque and appropriate citation at the Annual Banquet in Birmingham, Alabama, in April, 2009. The Meritorious Teaching Award Committee each year selects the award winner

- from among those who have been members of the association for at least 10 years
- and who have taught biology for at least ten years in any college or university represented in the association.

There is no restriction on the size of the institution, nor must the institution have a graduate program. The award simply recognizes highly effective teaching

- as highlighted in nominations from former students or colleagues.

There are many deserving teachers in ASB; however, these individuals cannot nominate themselves, so former students or colleagues must take an active role in assembling the materials that the committee will then evaluate.

We urge you to take the lead, pass the word – serve as the coordinator and nominate a deserving teacher! Solicit supporting letters from the nominee's present and former students. Contact his or her colleagues for additional endorsements. Document any form of recognition by the nominee's home institution of excellence in teaching, as well as special assignments and mentoring roles facilitating good teaching. Of special note would be the number and quality of students for whom the nominee provided primary inspiration to continue their study of biology, especially for students who subsequently earned advanced degrees. In short, document the educational impact this individual has made by virtue of his or her role as a biology professor.

Nominators should prepare a portfolio containing at least a letter of nomination, the nominee's current *curriculum vitae*, and supporting letters, together with the Nomination Form for the Meritorious Teaching Award and other relevant documentation. Submit all materials in triplicate by the January 23 deadline to: Dr. Ron Dimock, Department of Biology, Wake Forest University, 1834 Wake Forest Rd., Winston-Salem, NC 27106; (336) 758-5567; Fax (336) 758-6008; dimock@wfu.edu. If you have any questions, please call me or send an email. Files for previously nominated candidates who did not receive the award will remain active for two additional years, and these files may be updated. Such updated files are very carefully considered by the committee. The committee would welcome the task of deciding among several candidates.

Thanks for taking the initiative to nominate your favorite teacher!

Dr. Ron Dimock, Chair
ASB Meritorious Teaching Award Committee

NOMINATION–ASB MERITORIOUS TEACHING AWARD, 2009

NAME: _____

ADDRESS: _____

_____

_____

TEACHING INTEREST:

_____

NOMINATOR NAME/ADDRESS: _____

_____

_____

SUPPORTING DOCUMENTATION (to be submitted in triplicate):
Letter of Nomination _____; Nominee's *Curriculum Vitae*_____; Supporting letters _____; Verification of Nominee's Minimum 10-Year Membership in ASB _____; Additional Information (list) _____.

ASB ENRICHMENT FUND AWARD

ASB maintains an enrichment fund to support long- and short-range objectives to advance biological education through teaching and research. The Enrichment Fund Board is chaired by Bonnie Kelley. As has been the custom for the past several meetings, ASB recognizes individuals for their achievements and dedication to biology education at the secondary school level. The awardee is invited to attend the annual meeting and be honored. Expenses for attendance at the meeting are defrayed by the Enrichment Fund. The use of money from this fund shows appreciation for excellence in teaching at the secondary level, and to reach out to our colleagues in the teaching profession. Contributions to the fund can be made at the annual meeting or can be sent to the Treasurer of ASB whose address can be found in the inside front cover of this issue.

A Letter from the Treasurer

Dear ASB Member:

As you know, ASB strives to serve the educational and scientific community in many ways. These endeavors also serve the world community.
ASB encourages the advancement of biology by

- The promotion of research in biology
- The increase and diffusion of knowledge of biology
- The application of biology to the solution of biological problems
- The preservation of biological resources
- Its meetings, reports, discussions, and publications to promote scientific interests and inquiry

Website: http://www.asb.appstate.edu

PURPOSE

The Association of Southeastern Biologists was established in 1937 by biologists concerned with the quality of biological research in the southeastern United States. Today, ASB is the largest regional biology association in the country, and is committed to the advancement of biology as a science by the promotion of science education, research, and the application of scientific knowledge to human problems.

WHO WE ARE

ASB members include faculty, students, researchers, conservation workers, military and government personnel, and business people with a common interest in biological issues in the southeastern United States. Interests are diverse but range from genetics and molecular biology, to physiology and population ecology, to community and ecosystem ecology.

PATRONS

Associated Microscope Inc, Elon College and Haw River, NC
Tim Atkinson, Burlington, NC
Breedlove, Dennis & Associates, Winter Park, FL
Carolina Biological Supply Company, Burlington, NC
Martin Microscope Company, Easley, SC
Thomson Learning Brooks/Cole Publishing, Belmont, CA
Marilyn Pendley, West Iredell High School, Statesville, NC

AFFILIATE SOCIETIES

American Society of Ichthyologists and Herpetologists, Southeastern Division
Beta Beta Beta, Southeastern Districts I and II
Botanical Society of America, Southeastern Division
Ecological Society of America, Southeastern Chapter
Society of Wetland Scientists, South Atlantic Chapter
Southeastern Microscopy Society
Southeastern Society of Parasitologists
Southern Appalachian Botanical Society
Society of Herbarium Curators

AWARDS PRESENTED BY THE ASSOCIATION

The Association and its affiliates present a number of awards at the annual meeting. These include several for outstanding research, plus service awards.

ASB Awards

Meritorious Teaching Award – presented in recognition of outstanding teaching and mentoring of students. This is the association's most prestigious award. Sponsored by Carolina Biological Supply Company, Burlington, NC.

Student Research Award – presented to a student member for outstanding research. A written manuscript is required as well as an oral presentation at the annual meeting. Sponsored by the Martin Microscopy Company, Easley, SC.

Brooks/Cole Student Research Award in Aquatic Biology – presented to that student whose research in aquatic biology is deemed outstanding. Sponsored by Thomson Learning Brooks/Cole Publishing Company, Belmont, CA.

Senior Research Award – presented to a senior member for outstanding research. A written manuscript is required as well as an oral presentation at the annual meeting. Sponsored by ASB.

Student Poster Award – presented to a student member who has the best overall poster at the annual meeting. Sponsored by ASB.

Travel Support Grants – given to assist graduate students with expenses at the annual meeting. Sponsored by ASB.

Research Award in Microbiology – presented to a member for outstanding research in Microbiology. Sponsored by Thomson Learning Brooks/Cole Publishing Company, Belmont, CA.

Affiliate Awards

The North Carolina Botanical Garden Award – sponsored by the NCBG. Presented to a member for outstanding research which best advances our understanding of the biology and conservation of the southeastern plants.

Eugene P. Odum Award – sponsored by the Southeastern Chapter of the Ecological Society of America. Presented to a student member for the most outstanding paper presentation in the field of ecological research.

Elsie Quarterman-Catherine Keever Award – sponsored by the Southeastern Chapter of the Ecological Society of America. Presented to a student member for the most outstanding poster presentation in the field of ecological research.

Ichthyology and Herpetology Awards – sponsored by the Southeastern Division of the American Society of Ichthyologists and Herpetologists. Presented to a student member for outstanding research in each of the two categories.

Elizabeth Ann Bartholomew Award – sponsored by the Southern Appalachian Botanical Society. Presented to individuals who have distinguished themselves in professional and public service that advances our knowledge and appreciation of the world of plants.

Richard and Minnie Windler Award – sponsored by the Southern Appalachian Botanical Society. Presented annually to the author or authors of the best systematic botany paper published in Castanea during the previous year.

Student Award in Plant Science – sponsored by the Southeastern Section of the Botanical Society of America. Presented to a student for the most outstanding paper presentation in plant science.

Byrd Award – sponsored by the Southeastern Society of Parasitologists. Presented to a member for outstanding research in the field of parasitology.

Ruska Award – sponsored by the Southeastern Microscopy Society. Presented annually to recognize and reward student excellence in research in which microscopy is used as a research tool.

ANNUAL MEETING

Annual meetings are hosted by member institutions throughout the southeast. Meetings are in April, and include a distinguished plenary speaker, special symposia, field trips, oral and poster presentations of research, workshops, social events, exhibits, election of officers, and award presentations.

MEMBERSHIP

The Association of Southeastern Biologists currently has about 1400 members, spread among 220 academic and 60 non-academic institutions.

ACTIVITIES

The Association publishes a quarterly bulletin, *Southeastern Biology*, which contains the program of the annual meeting and abstracts of papers presented, book reviews, science news and information about scientists in the southeast, Association affairs, and special features of regional or timely interest.

SEVEN REASONS TO BE AN ACTIVE ASB MEMBER

1. Subscription to *Southeastern Biology*, the Bulletin of the Association.
2. Privilege of presenting papers at the annual meeting.
3. Publication of your abstracts and articles in *Southeastern Biology*.
4. Participation in recognition, honors, and awards competition.
5. Representation of your interests in regional, national, and worldwide governmental, educational, and industrial programs concerning biology
6. A vehicle to showcase and support students' work in the biological sciences.
7. Participation is a commitment to your profession and your active support becomes part of over 60 years of significant biological legacy in the southeastern United States.

A contribution to the ASB Enrichment Fund will help to insure the continuation of these efforts. Please consider what you may do.

YES, I want to contribute to the ASB Enrichment Fund!

I enclose my contribution of $_____. Please use this to further the interests of ASB and its Members.

I would like to see the ASB Enrichment Fund used in the following areas (Check those you wish to support):

_____ Research Awards

_____ Student Research Awards

_____ Graduate Student Travel Grants

_____ Speakers & Programs for the Annual Meeting

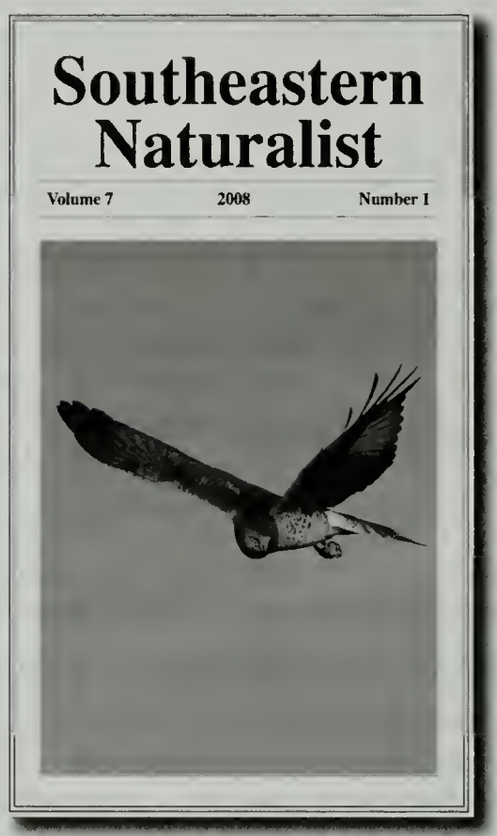
_____ Outstanding Teacher Awards

Other (please list) _____

Please make any **checks payable to ASB**. Please mail your contributions and ideas to:

Tim Atkinson
ASB Treasurer/Business Manager
Carolina Biological Supply Company
2700 York Road
Burlington, NC 27215-3398

ASB and the *Southeastern Naturalist* ...!
A shared tradition of natural history scholarship.



NEW!
Online supplementary files now possible! Publish your large maps, data tables, audio and video files, and even powerpoint files!

- The latest regional natural history research.
- **NEW!** Free online access for SENA subscribers to both the *Southeastern Naturalist* and its co-published journal *Northeastern Naturalist* at www.eaglehill.us, starting in 2008.
- **NEW!** Notes section presenting brief but interesting and significant field observations.
- Concise reviews of new and notable books.
- Over 750 pages per year. (4700 pages since 2002!)

For more information about subscriptions or submissions, visit us at:
www.eaglehill.us/sena

Southeastern Naturalist

Volume 7 2008 Number 1

CONTENTS

RESEARCH ARTICLES

Foraging Behavior of Short-eared Owls and Northern Harriers on a Reclaimed Surface Mine in Kentucky 1
Mark Vukovich and Gary Ritchison

Winter Bird Population Studies and Project Prairie Birds for Surveying Grassland Birds 11
Daniel J. Twedt, Paul B. Hamel, and Mark S. Woodrey

Age-related Differences in Kleptoparasitic Behavior of Magnificent Frigatebirds 19
Lesley P. Bulluck and Jason F. Bulluck

Current and Historical Composition and Size Structure of Upland Forests Across a Soil Gradient in North Mississippi 27
Sherry B. Surrette, Steven M. Aquilani, and J. Stephen Brewer

Ridgetop Fire History of an Oak-Pine Forest in the Ozark Mountains of Arkansas 49
Bear L. Engbring, Eric Heitzman, and Martin A. Spetich

Influence of Competition on the Density of the Federally Endangered Michaux's Sumac (*Rhus michauxii*) at Fort Pickett, Virginia 61
Verl Emrick and Jeffray Jones

Life History of the Tricolor Shiner, *Cyprinella trichroistia* (Teleostei: Cyprinidae), in Alabama 69
Jeremy H. Scott and Richard L. Mayden

Shelter-use and Interactions Between Banded Sculpin (*Cottus carolinae*) and Bigclaw Crayfish (*Orconectes placidus*) in Stream-pool habitats 81
Crystal Bishop, Brianna Begley, Christina Nicholas, Jessica Rader, Elizabeth Reed, Kyle Sykes, Todd Williams, Elizabeth Young, and Dennis Mullen

Distribution of Tardigrades in Florida 91
Harry A. Meyer

A Dung Beetle Assemblage in an Urban Park in Louisiana 101
Meghan G. Radtke, Chris E. Carlton, and G. Bruce Williamson

Scale-dependent Habitat Selection by Female Florida Black Bears in Ocala National Forest, FL 111
Melissa A. Moyer, J. Walter McCown, and Madan K. Oli

Osteological Variation within the Baldwin County, GA, Population of *Didelphis virginiana* 125
David B. Patterson and Alfred J. Mead

Seasonal Food Habits of the Coyote in the South Carolina Coastal Plain 135
Joshua D. Schrecengost, John C. Kilgo, David Mallard, H. Scott Ray, and Karl V. Miller

Distribution of *Mycoplasma agassizii* in a Gopher Tortoise Population in South Florida 145
Melissa L. Karlin

Visible Implant Elastomer as a Tool for Marking Etheostomine Darters (Actinopterygii: Percidae) 159
Michael R. Weston and Ronald L. Johnson

Tag Returns from Loggerhead Turtles from Wassaw Island, Georgia 165
Kristina L. Williams and Michael G. Frick

A Complex Mimetic Relationship Between the Central Newt and Ozark Highlands Leech 173
Malcolm L. McCallum, Stacy Beharry, And Stanley E. Trauth

NOTES

Notes on Harper's Beauty, *Harperocallis flava* (Tofieldiaceae), in Bay County, Florida 180
Lisa A. Keppner and Loran C. Anderson

BOOK REVIEWS 185

Publication Date: March 31, 2008

Printed on Recycled Paper

NEWS OF BIOLOGY IN THE SOUTHEAST

Ricky Fiorillo—*News Editor*
Department of Biology
University of Louisiana at Monroe
Monroe, LA 71209
318-342-1797
fiorillo@ulm.edu

ABOUT PEOPLE AND PLACES

ALABAMA

University of Alabama in Huntsville, Department of Biological Sciences. ASB member Dr. Bruce Stallsmith received a grant from the Walter Coxe Fund of the Birmingham, AL, chapter of the Audubon Society to study the stippled studfish, *Fundulus bifax*. This killifish, endemic to the Tallapoosa River basin of Georgia and Alabama, has apparently been extirpated from Georgia. Based on museum records of the University of Alabama Ichthyology Collection, Dr. Stallsmith has been visiting historic collection sites for this species to determine its presence or absence in Alabama. In addition, Dr. Stallsmith is investigating the genetic structure of the species, since it appears to exist in isolated populations in tributaries of the Tallapoosa River.

ARKANSAS

Southern Arkansas University, Department of Biology. Dr. Henry W. Robison retired after 37 years in the Department of Biology at Southern Arkansas University. An author of over 100 journal publications and several books, he is noted for studies on the fishes and crustaceans of Arkansas and Oklahoma.

Dr. Claude D. Baker joined the Biology Department at Southern Arkansas University as Professor of Biology. Dr. Baker received his PhD from the University of Louisville and will teach ecology and zoology. Prior to this appointment, Dr. Baker taught at Indiana University Southeast.

GEORGIA

Young Harris College, Division of Mathematics and Science, and Department of Biology. ASB member Dr. Paul T. Arnold is now Dean of Mathematics and Science and the Director of the College's Predatory Beetle-Rearing Facility which raises biopredatory beetles used to combat the Hemlock Wooly Adelgid. Ms. Brenda K. Hull, Department of Biology faculty member, has been appointed as the Young Harris College Sustainability Coordinator. The Biology Department has hired three new faculty. Dr. Rosemarie Barkus is a new Assistant Professor of Biology. She received a Ph.D. in Genetics from Indiana University and has worked primarily with the genetic systems of nematodes. Dr. Jody Stallings is a new Assistant Professor of Biology and has a Ph.D. in Forest Resources from the University of Florida with special expertise in Conservation Biology and

Mammalogy. He comes to Young Harris following four years working for the US Agency for International Development in the Environmental Ministry of Uganda. Dr. Keith Robinson will join the faculty in January of 2009 as an Associate Professor of Biology. Dr. Robinson has a Ph.D. in Exercise Physiology from Florida State University, and has been a professor at Emory University prior to coming to Young Harris. Keith has special expertise in Biomedical research and cardiac physiology.

SREL Ecologist Receives Top Wetlands Award

Dr. Rebecca R. Sharitz, a Plant Ecologist at the Savannah River Ecology Laboratory, was elected a Fellow in the Society of Wetland Scientists, one of only nine members in the Society's history to receive this honor.

Dr. Sharitz was honored at the Society's 29th annual meeting in Washington, D.C., which was held from May 26-30.

The SWS is the major society of professional wetland scientists and has around 3,500 members nationally and internationally. Fellow is the highest recognition of membership bestowed by SWS, and the recognition is given to individuals who have made outstanding contributions in their area of specialization in teaching, research and service.

Dr. Sharitz studies freshwater wetlands, focusing on swamps, river floodplains, and Carolina bays. She has trained numerous graduate students through the University of Georgia who have continued research in wetlands throughout the country. She is the co-editor of the current wetland textbook *Ecology of Freshwater and Estuarine Wetlands* published by the University of California Press.

LOUISIANA

University of Louisiana at Monroe, Department of Biology. Dr. Sushma Krishnamurthy, Professor of Biology, is the new Department Head of Biology. Dr. Krishnamurthy received her Ph.D. from the University of Maryland Eastern Shore and has expertise in Water and Sediment Quality. Prior to this appointment, she spent 13 years on the faculty at Texas A & M International. Dr. Kim Marie Tolson is now the new Graduate Coordinator of the College of Arts and Sciences. She also will continue to serve as the Department of Biology Graduate Coordinator.

University of Louisiana at Monroe, ULM Museum of Natural History. The Museum's exhibits and research collections have a permanent new home on the 3rd floor of Sandel Hall on the Campus of the University of Louisiana at Monroe. The Museum consists of the Divisions of Botany (Dr. Thomas Sasek, Curator, and Mr. Dennis Bell, Collection Manager), Geosciences (Drs. Gary Stringer and Joe Saunders, Curators of Paleontology and Archeology, respectively) and Zoology (Dr. John Carr, Curator). Beginning in Spring 2006, countless student, staff and faculty volunteers spent thousands of hours moving all museum

material to its new location. This monumental effort was led by Dr. Neil Douglas, Professor Emeritus of Biology, and the Division directors.

The mission of the ULM Museum of Natural History is to promote and advance an understanding and appreciation of all aspects of natural history through its collections, exhibits, education, and research. The museum ichthyology collection is the 3rd largest university based collection in North America with over 11 million specimens, while the Herbarium, founded by Dr. Dale Thomas, features approximately 500,000 specimens. The Division of Geosciences has significant research collections of archeological artifacts and diverse holdings of minerals, rocks, and fossils (invertebrate, vertebrate, and plant). The Museum exhibits are open to the public, and the extensive research collections may be accessed by contacting the respective Division Directors. For additional and contact information please visit the Museum website at www.ulm.edu/~museum.

MISSISSIPPI

Mississippi State University, Rivercane Restoration Project, Departments of Biology and Plant and Soil Sciences. Mississippi State University has received an EPA Region 4 grant to restore rivercane along the upper reaches of the Pearl River on lands belonging to the Mississippi Band of Choctaw Indians (MBCI). Once abundant, these ecosystems are now considered critically endangered due to agriculture, grazing, fire suppression, and urbanization. Goals of this restoration project include: improving mitigation of wetlands using canebrakes; enhancing propagation methods; maximizing genetic diversity and genetic drift; define protocols for canebrake restoration in riparian habitats, and develop adequate measures for monitoring and assessing wetland health by addressing ecological, cultural and economic factors. In connection with this project, studies conducted at MSU will investigate the effects of shade and fertilizer on the growth and productivity of rivercane. Genetic studies are also underway to understand the genetic diversity between clonal groups. For additional information, please contact Brian Baldwin, (BBaldwin@pss.msstate.edu), Gary Ervin (GErvin@biology.msstate.edu), or Rachel Jolley (RJolley@biology.msstate.edu), or visit the Rivercane Website at http://rivercane.msstate.edu. Several presentations given during the Rivercane symposium at the ASB meetings are available for viewing.

MISSOURI

University of Central Missouri. ASB student member Mr. Christopher D. Crabtree, received the University of Central Missouri College of Science and Technology William L. Vacek Graduate Student Research Award and was recognized as the outstanding graduate student at the annual University of Central Missouri Department of Biology and Earth Science Annual Banquet. In addition, Mr. Crabtree received the Missouri Natural Resources Conference 2008 Award for best student poster entitled “Macrofungi and myxomycetes associated with specific community types of Ha Ha Tonka State Park, Missouri” and the UCM Sigma Xi Chapter honored Chris for the best graduate research paper entitled

"Macrofungi, myxomycetes, and soil attributes associated with five communities at Ha Ha Tonka State Park, Missouri."

ASB student member Courtney M. Kilgore, received the Nahm Award for the Outstanding Graduate Student from the UCM College of Science and Technology and submitted the winning t-shirt logo design adopted by the Mycological Society of America to highlight their annual meeting held at Penn State University, August 10-13, 2008. Her design, in a style reminiscent of early taxonomical drawings, included several edible mushrooms framed in a classic art nouveau border highlighted by several mold genera.

ASB student member Sydney E. Everhart, received the UCM University Research Council Outstanding Graduate Student Thesis Award. Her thesis is titled "Assemblages and Distribution of Corticolous Myxomycete Species in the Tree Canopy of Selected Forest in Kentucky and Tennessee".

Angela R. Scarborough received the UCM Sigma Xi best undergraduate research paper award for her paper "Species Assemblages of Tree Canopy Myxomycetes Related to Bark pH." She also was recognized as Outstanding Tri-Beta Member and currently serves as President of the UCM Chapter.

NORTH CAROLINA

Davidson College, Biology Department. The Davidson College Biology Department received the 2008 North Carolina Earth Team Award. This award was given by the United States Department of Agriculture Natural Resources Conservation Service and the Association of Soil and Water Conservation Districts. "Earth Team" is a Natural Resources Conservation Service volunteer program that provides leadership through partnerships that help people conserve, maintain, and improve natural resources and the environment. Students and staff from the Davidson College Herpetology Laboratory, volunteered 788 hours in 2007 as "Technical Conservation Aides". Their efforts are part of a multi-year research project funded by a NSF grant to study the impact of rapid urbanization in the Charlotte area on wildlife habitat. Recommendations based on Davidson College's award-winning biological field research are already beginning to inform local land-use planning initiatives. Conservation planning efforts for the state-designated Clarke Creek Heron Rookery Significant Natural Heritage Area are being informed by preliminary results of Davidson College's research in a subdivision currently under construction next to a 200-acre wetland complex on Clarke Creek. A regional environmental education field station being planned by Cabarrus Soil and Water Conservation District at this wetland will engage area primary and secondary school students in ongoing research and conservation efforts.

Davidson College, Biology Department. Dr. Mike Dorcas, Director of the Herpetology Laboratory at Davidson College, received a $4800 Faculty Development Grant from the Associated Unique opportunities for undergraduate research: Studies of invasive Burmese pythons in Everglades National Park.

Johnson C. Smith University. Dr. Alexa Rosypal is a new Assistant Professor of Biology in the Department of Natural Sciences and Mathematics. Prior to this appointment, Dr. Rosypal was a SPIRE Fellow at the University of North Carolina at Chapel Hill.

North Carolina State University, Department of Plant Biology. Dr. JoAnn Burkholder was recently named a William Neal Reynolds Professor, and Dr. Jon Stucky was recently promoted to the rank of Full Professor of Plant Biology. The Department of Plant Biology also welcomes two new faculty members in 2008-2009, both at the rank of Assistant Professor. Dr. Marcela Rojas-Pierce joined the department on August 1, 2008; her specialty is plant cell biology. Dr. Marc Johnson will join the department on February 1, 2009; his specialty is plant evolutionary ecology.

University of North Carolina at Chapel Hill, North Carolina Botanical Garden. ASB member Gary Perlmutter's manuscript "The Lichens Biota of Mason Farm Biological Reserve, North Carolina" was accepted for publication in *The Journal of the North Carolina Academy of Sciences*, and appeared in the August 2008 issue of the journal.

SOUTH CAROLINA

Coastal Carolina University, Biology Department. Drs. Deborah A. Hutchinson and Doug Van Hoewyk are new faculty members in the Biology Department. Dr. Hutchinson is a vertebrate biologist, herpetologist, and chemical ecologist, who conducted her graduate work at Old Dominion University in Virginia. Prior to joining the faculty at CCU, she spent two years as a postdoctoral researcher at Cornell University. Dr. Van Hoewyk is a plant molecular biologist from Colorado State University.

TENNESSEE

Dr. Gordon M. Burghardt, Alumni Distinguished Service Professor, Departments of Psychology and Ecology and Evolutionary Biology, University of Tennessee, Knoxville, was a Visiting Professor at the Kyoto University Museum in Kyoto, Japan, studying snake diet, behavior, and toxins as well as snake and monkey interactions at the Kyoto University Primate Institute in Inuyama, Japan. The museum funded the visit from June 20 to October 1, 2008.

Dr. Hong Guo, Department of Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, has been promoted to Associate Professor of BCMB. He also has been awarded a $297,485.00 grant for three years by the National Science Foundation.

Dr. Elizabeth E. Howell, Professor of Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, has been awarded a grant from the National Science Foundation for three years in the amount of $511, 338.00. The grant title is "R67, The Other Dihydrofolate Reductase."

Dr. Gary McCracken, Professor of Ecology and Evolutionary Biology, University of Tennessee, Knoxville, has been appointed Head of the Department. He follows Dr. Christine Boake who served as head for many years.

Dr. Andreas Nebenführ, Department of Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, has been awarded tenure combined with a promotion to Associate Professor of BCMB. He was also invited to give a talk in early July 2008 at the annual meeting of the Society for Experimental Biology (from UK) in Marseille, France. Dr. Nebenführ also has

been awarded a grant from the National Science Foundation for three years in the amount of $530,000.00. The grant title is "Myocin Function in Root Hairs."

Dr. Cynthia Peterson, Professor of Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, has been appointed Head of the Department. She follows Dr. Bruce McKee in this position after his seven years of dedicated service in this role. Dr. Peterson has also just been awarded a five-year grant from the National Science Foundation. This is an IGERT award (Interdisciplinary Graduate Education and Research Training), and the theme is computational biology. She has given the new program the title, "SCALE-IT: Scalable Computing and Leading Edge Innovative Technologies." The emphasis is for training of graduate students who are savvy in using computational tools to address questions across the scales in biology—from molecules to systems. Unique tools at UTK and ORNL, including the recent Track II Supercomputer that was funded by NSF, the Spallation Neutron Source, molecular biophysics and mammalian systems genetics programs, provide unparalleled resources for training of students in this rapidly changing field. Funding for the first year is $582,828 and the total over five years is $2,982,000.

VIRGINIA

University of Mary Washington, Department of Biological Sciences. Dr. Theresa M. Grana joined the faculty in fall 2008. Prof. Grana comes to UMW from a Postdoctoral Fellowship in the laboratory of Prof. Jeff Hardin at the University of Wisconsin-Madison. She completed her Ph.D. in genetics and molecular biology at the University of North Carolina Chapel Hill. Professors Kathryn Loesser-Casey and Lynn O. Lewis are principal investigators of a grant funded by the Howard Hughes Medical Institute (HHMI) to participate in a nationwide genomics course that will give first-year college students the opportunity to use sophisticated research techniques. UMW is among 12 colleges and universities in the United States, three in Virginia, chosen by HHMI's Science Education Alliance (SEA). The SEA, headquartered at Janelia Farm Research Campus in Northern Virginia, seeks to expand the teaching of science and inspire new generations of scientists. The course, known as the Phage Genomics Research Initiative, is being developed by the SEA and will begin in fall 2008. The SEA will cultivate a network of scientists and educators who will work collaboratively to develop and distribute new information and methods to the education community.

Alan B. Griffith, Ph. D. is a co-principle investigator on an NSF grant on Course, Curriculum and Laboratory Improvement Program. The project entitled "Diagnostic Question Clusters to Improve Student Reasoning and Understanding in General Biology Courses," is a collaboration with professors Charlene D'Avanzo (Hampshire College) and Andy Anderson (Michigan State University). Prof. Griffith also published "Semester-long engagement in science inquiry improves students' understanding of experimental design" in Teaching Issues and Experiments in Ecology an online publication of the Ecological Society of America (http://tiee.ecoed.net/vol/v5/toc.html). Professors Debra (mathematics), Alan Griffith, and Kathryn Loesser-Casey were awarded a grant form the American Statistical Association entitled "Enhancing Awareness of Biostatistics Among Students."

All Taxa Biodiversity Inventory (ATBI)

Gatlinburg, Tennessee

ATBI is an organization devoted to surveying all life in the Great Smoky Mountains National Park.

More information about the ATBI and Discovery Life in America (DLIA) may be obtained from the Executive Director, Todd Witcher, by e-mail todd@dlia.org. The website is http://www.discoverlifeinamerica.org or at http://www.dlia.org. The mailing address is Discover Life in America, 1314 Cherokee Orchard Road, Gatlinburg, TN 37738-3627. The telephone number is (865) 430-4752.

Southern Appalachian Forest Coalition (SAFC)

Asheville, North Carolina

As stated in their newsletter *Across Our Mountains*, SAFC is an organization dedicated to "working together to protect and restore southern Appalachian forests."

More information about SAFC may be obtained from their web site at http://www.safc.org, and by e-mail at safc@safc.org. The mailing address is Southern Appalachian Forest Coalition, 46 Haywood Street, Suite 323, Asheville, North Carolina 28801-2838. The telephone number is (828) 252-9223.

OBITUARIES

WAYNE REYNOLDS FAIRCLOTH

1932-2008

A native of rural Grady County in southern Georgia, Wayne R. Faircloth grew up on his family farm there. As was then generally the case in the rural south, he undoubtedly spent many hours exploring the vast outdoors, developing keen powers of observation and what would become a lifelong interest in natural history, but most especially plants and descriptive botany. This region of Georgia is topographically and floristically diverse, its plant communities ranging from mesic slope forests with Appalachian affinities to subtly diverse, fire-dependent rolling longleaf pine – wiregrass savannas and their associated pitcher-plant bogs to bottomland swamps and woods along the creeks and rivers. Undoubtedly, Wayne Faircloth was influenced early by the natural diversity and immense beauty of his homeland, and by its people. Shortly after I arrived at Valdosta State College (now University) in the fall of 1984, Professor Faircloth recommended that I read *The Other Florida* (Jahoda 1967). This wonderful book provided for me considerable insight into the region, and his recommendation of it a window into his psyche, which, in retrospect, has only heightened my respect for him.

Wayne Faircloth attended public school in Whigham, Georgia, graduating from Whigham High School with Honors in 1948. After only two years of college, at age 18, Wayne began his teaching career at Whigham School. He first taught science to fourth and fifth graders and then taught high school biology and chemistry. He continued his pursuit of higher education at Valdosta State College, earning the B.S. degree in Biology with Honors in 1955. Subsequently, he earned the M.Ed. in Biology and Science Education from the University of North Carolina in 1959. While in residence as a faculty member at Valdosta State, he completed degree requirements and earned the Ph.D. in Botany from the University of Georgia in 1971. His dissertation, under the direction of Dr. Wilbur H. Duncan, was titled *Vascular Flora of Central South Georgia*, and his dissertation research involved substantial field work and resulted in his extensive collection of voucher specimens. These specimens were deposited primarily at Valdosta State, where they and his subsequent collections form the nucleus of the Valdosta State University Herbarium. His duplicate specimens were deposited at the University of Georgia Herbarium, the University of North Carolina Herbarium, and other herbaria. Prior to Dr. Faircloth's employment at Valdosta State, the herbarium was a small teaching collection consisting of several hundred specimens mostly collected by his former teacher, Dr. Beatrice Nevins. But for all practical purposes, Dr. Faircloth established the Valdosta State Herbarium (VSC), for it was under his curatorship that it grew from a small teaching collection to a recognized research facility, exchanging and lending specimens and receiving official recognition among the World's herbaria by listing in *Index Herbariorum* (Holmgren et al. 1990). When he stepped down as

Curator of the Herbarium in 1984 in order to become Head of the Biology Department, VSC comprised more than 30K accessions.

Dr. Faircloth was a generalist of the Old School, who believed that broad training in biology and the ancillary sciences was essential. More than once, he lamented the increasingly narrow focus of teaching and research in biology. First and foremost he was a teacher, and he was unusual as such nowadays in having taught at all levels from elementary school through college. He gained substantial teaching and administrative experience prior to his service as a faculty member at Valdosta State at his *alma mater*, Whigham High School, in rural Grady County. His record of service and promotion at Whigham High School and subsequently at Valdosta State University leave no doubt about his considerable abilities as a teacher and as an administrator. He was Science Instructor at Whigham High School from 1951-1954 and Biology Instructor and Chairman of the Science Department from 1956-1958. In 1959 he was appointed Vice Principal while serving as Biology and Chemistry Instructor, and he became Principal in 1960. Subsequently, he left Whigham after receiving an invitation to teach at his *alma mater*, Valdosta State College, in 1961, where he remained until his retirement. At Valdosta State he ascended through the ranks becoming Associate Professor in 1967, Professor in 1971, Acting Head of the Department in 1984, and Head of the Department in 1985. He remained Head of the Department until illness forced him to retire in 1996, when he was appointed Emeritus Professor of Biology.

In 1966, Wayne married Juanita Jane Norsworthy who graduated with a B.S. in Biology at Valdosta State in 1965. As his student, Juanita had completed a Directed Study project documenting the pteridophytes of nearby Echols County, Georgia, which was published in the *American Fern Journal* (Norsworthy 1966). Wayne and Juanita had three children, Anna Marjorie, Amy Claire, and Wilson Henry, and, at the time of his death, six grandchildren.

Dr. Faircloth's professional and honorary memberships included the American Association for the Advancement of Science, the Botanical Society of America, the American Fern Society, the Southern Appalachian Botanical Society, the Association of Southeastern Biologists, the Georgia Academy of Science, the Phi Kappa Phi Scholastic Fraternity, the Alpha Chi Honor Society, the Phi Sigma Honorary Biological Society, and the Omicron Delta Kappa Honorary Service Fraternity. He was a member of the Executive Board of the Georgia Academy of Science, serving as President of that organization in 1975-1976. He chaired the Advisory Board for Reed Bingham State Park 1973-1977, and was a member of the Georgia Department of Natural Resources Advisory Commission on Protected Plant Species that developed Georgia's official Protected Plants List. He also served for many years on the Editorial Board of *Tipularia*, the Journal of the Georgia Botanical Society. He was elected an Outstanding Educator of America in 1972 and a Fellow of the Georgia Academy of Science in 1977. In 1981, he received the Award of Merit, the highest honor given by the Garden Club of Georgia, and in 1984 he received the Distinguished Alumnus Award from the Valdosta State Alumni Association. He was instrumental in establishing the Tree Commission of the City of Valdosta, was a Charter Member of that organization, and served as its Chair from 1986-1994,

and he was active on various other boards and committees of local civic importance.

In a 1995 resume, Dr. Faircloth cited his research interests as vascular flora of the Atlantic-Gulf Coastal Plain, biosystematics of *Ophioglossum* in the United States, biosystematics of *Baptisia arachnifera* Duncan, and ecosystem preservation of rare and endangered species in Georgia. He is perhaps best known for his substantial research documenting the flora of south-central Georgia that stemmed from his dissertation and his work with pteridophytes.

Dr. Faircloth donated his field notebooks to the Valdosta State University Herbarium, where they currently reside. He used the standard method of ascribing serial collection numbers to his vouchers. His first field notebook entry was made on November 7, 1961, and appropriately, in light of his special interest in pteridophytes, it was a collection of *Lycopodium carolinianum* L. from a wet, exposed roadside ditch alongside Highway GA 31, 3½ miles south of Pearson in Atkinson County, Georgia.

Dr. Faircloth's field notebook data entries are meticulously and neatly recorded and complete, including observations of habitat and habit. Perusing his field notes, one finds that on 07 March 1999, near the end of his last field notebook he made a data entry for his number *8953*, a collection of *Ophioglossum crotalophoroides* Walt. from Calvary, Grady County, Georgia, growing in the lawn of the Piedmont P. B. Church near where he would be laid to rest. Then turning the leaf to the penultimate inscribed page one finds the following annotation in his ever neat and deliberate, cursive hand.

> Note, little field work was done in the years 1996-1999. I retired from Valdosta State University, moved to the family farm in Grady County, Georgia, and was involved in clearing and landscaping the area around a new homesite. I was diagnosed as having Multiple Myeloma in August 1999 and was on heavy doses of chemotherapy through 2000. I am presently (April 2001) in remission after a stem-cell transplant in December 2000.

Knowing Wayne as I did, I believe it was not mere happenstance that he started and ended his career as a field botanist vouchering native pteridophytes. For, although a generalist of the Old School and a floristician, he held a special interest in this particular group of plants. Given the importance of life cycles and life history in biology, the completion of cycles in Wayne's life is of special interest – his return to the family homeplace upon retirement, then the collection of a pteridophyte at the end of a long, productive career as a field botanist and teacher.

Beyond this, as if a postscript, he subsequently recorded one voucher data entry for each of the dates 18 April 2001 and 27 April 2002, his numbers *8954* and *8955*, both of *Imperata cylindrica* (L.) Beauv., from Bainbridge in Decatur County, Georgia, and Brooksville in Hernando County, Florida, respectively. It is moving to consider that his very last collections were of a Federal Noxious Weed that only recently had invaded his beloved Georgia Coastal Plain, which most certainly underscores his concern for the devastating effects on natural

ecosystems of short-sighted, selfishly motivated, and ignorant human actions. Congruously, Wayne's son, Wilson, earned the B.S. in Botany from the University of Georgia in 1997 and was awarded the Ph.D. in Weed Science from Auburn University in 2004, with *Imperata cylindrica* the subject of his research.

References Cited

Holmgren, P.K., N.H. Holmgren and L.C. Barnett. 1990. Index Herbariorum. Part I. The Herbaria of the World. 8th Ed. Regnum Vegetabile 120.

Norsworthy, Juanita. 1966. Fern records for Echols County and the state of Georgia. American Fern Journal 56:55-57.

Jahoda, Gloria. 1967. The Other Florida. Scribner. New York. 336 pp.

Richard Carter, Biology Department, Valdosta State University, Valdosta, GA 31698-0015.

Dr. Wayne Reynolds Faircloth

Robert Brown Short

1920-2007

Dr. Robert Brown (Bob) Short, 87, former president of the Association of Southeastern Biologists died Saturday, November 24, 2007. Dr. Short was born February 28, 1920 in Changsha, China, to missionary parents and spent his childhood in Harrisburg and Port Royal, Pennsylvania. He received a B.A. (*magna cum laude*) from Maryville College, Maryville, Tennessee in June 1941, an M.A. from the University of Virginia in June 1945, and a Ph.D. in June, 1950 from the University of Michigan under Dr. George R. LaRue. While at the University of Michigan he was inducted into Phi Beta Kappa. At the University of Virginia he met and later married Lavinia Mullinnix. They were married for 51 years until her death in 1998. He later married Margaret "Maggie" Dellenbach who was his wife for the last seven years of his life.

Bob served as an instructor in mathematics and Latin at the Suwannee Military Academy from 1941–1943 and as a teacher of mathematics and biology at the Virginia Episcopal School, Lynchburg, Virginia, in 1943–1944. He joined the biology faculty at Florida State University in 1950, becoming Professor of Biology in 1957. He retired as Professor Emeritus in 1990.

A very active researcher in parasitology, Bob and his students published 60 papers in refereed journals and had numerous presentations and abstracts at various meetings. Among the presentations are thirteen given at ASB meetings. He supervised 22 master's theses and fifteen doctoral dissertations. He took great pride in the outstanding success of his former students and kept up with them throughout his life. His research centered around the systematics, development, and evolutionary significance of dicyemid Mesozoa and the cytogenetics and sensory structures of parasitic flatworms, especially schistosomes.

Various professional societies profited from his activities in them. Included were the American Society of Parasitologists, where he served as Council Member (1967-1971), Vice President (1977) and President (1982); the Southeastern Society of Parasitologists, serving as President, in 1971–72. Dr. Short received the Meritorious Service Award of the Southeastern Society of Parasitologists in 1992 and was named the Distinguished Emeritus Member, American Society of Parasitologists in 1992. He was very active in the Association of Southeastern Biologists, having served on numerous committees and as an Executive Committee Member at Large, 1958– 1961 and again 1965–1968. He served as President of ASB in 1968-1969 and received the ASB Meritorious Teaching Award in 1980.

Being very active in community affairs, Bob served as Secretary, then Treasurer of the University School PTA, Secretary, then President of the Optimist Club, and as a volunteer tax counselor for Elderly in Tallahassee. He also helped students with Science Fair projects and served as a Science Fair Judge. While at Maryville College Bob played for the college baseball team, and later became a little league baseball coach in Tallahassee. As a member of Trinity United

Methodist Church, Tallahassee, served on Administrative Board and on two commissions, and participated in activities such as Meals on Wheels and Cold Night Shelter for the homeless. A lifelong hobby of woodworking led him to build many items for local schools and disadvantaged children.

Bob Short was known for his wit and for being very meticulous in his teaching and in his research. He will be greatly missed.

J. K. Shull, Jr., Department of Biology, Appalachian State University, Boone, NC 28608.

Dr. Robert Brown Short

LARRY T. WIMER

1936-2008

Dr. Larry T. Wimer, born in Stuttgart, AR, December 20, 1936, passed away in Savannah, GA, Tuesday, July 8, 2008. He was the son of the late John W. and Vesta Jones Wimer. Dr. Wimer was a 1957 graduate of Phillips University, earned his Master's degree in 1959 at Rice University and his Ph.D. in 1962 at the University of Virginia. Professor Wimer taught in the Biology Department at the University of South Carolina from 1964 until 2005, and his courses in physiology were highly praised campus-wide. He served as Chairman of the Biology Department at USC for 10 years. He was an active member of the Association of Southeastern Biologists from 1964 until 1974 during which time he and his students participated in each annual meeting of the association.

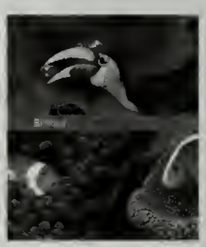
John Herr, Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.

Dr. Larry T. Wimer

BROOKS/COLE
CENGAGE Learning

Proud to be a patron member of the ASB!

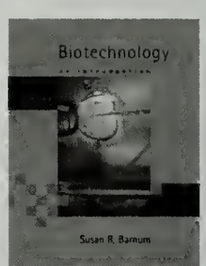
NEW TITLES from Brooks/Cole Available NOW!



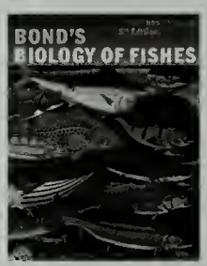
Biology: The Unity and Diversity of Life,
Twelfth Edition
Cecie Starr, Ralph Taggart, Chris Evers, Lisa Starr
ISBN 10: 0-495-55792-7
ISBN 13: 978-0-495-55792-0

Living in the Environment: Principles, Connections, and Solutions,
Sixteenth Edition
G. Tyler Miller, Jr., Scott Spoolman
ISBN 10: 0-495-55671-8
ISBN 13: 978-0-495-55671-8

Human Heredity: Principles and Issues,
Eighth Edition
Michael Cummings
ISBN 10: 0-495-55445-6
ISBN 13: 978-0-495-11425-3



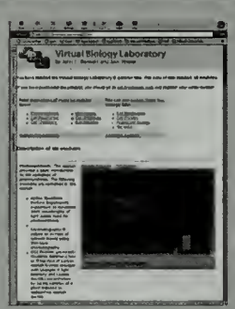
Biotechnology: An Introduction,
Updated Second Edition
Susan R. Barnum
ISBN 10: 0-495-11205-4
ISBN 13: 978-0-495-11205-1



Bond's Biology of Fishes,
Third Edition
Michael Barton
ISBN 10: 0-12-079875-1
ISBN 13: 978-0-120-79875-9

Essentials of Ecology,
Fifth Edition
G. Tyler Miller, Jr.
ISBN 10: 0-495-55795-1
ISBN 13: 978-0-495-55795-1

Human Genetics and Society
Ronnee Yashon, Michael Cummings
ISBN 10: 0-495-11425-1
ISBN 13: 978-0-495-11425-3

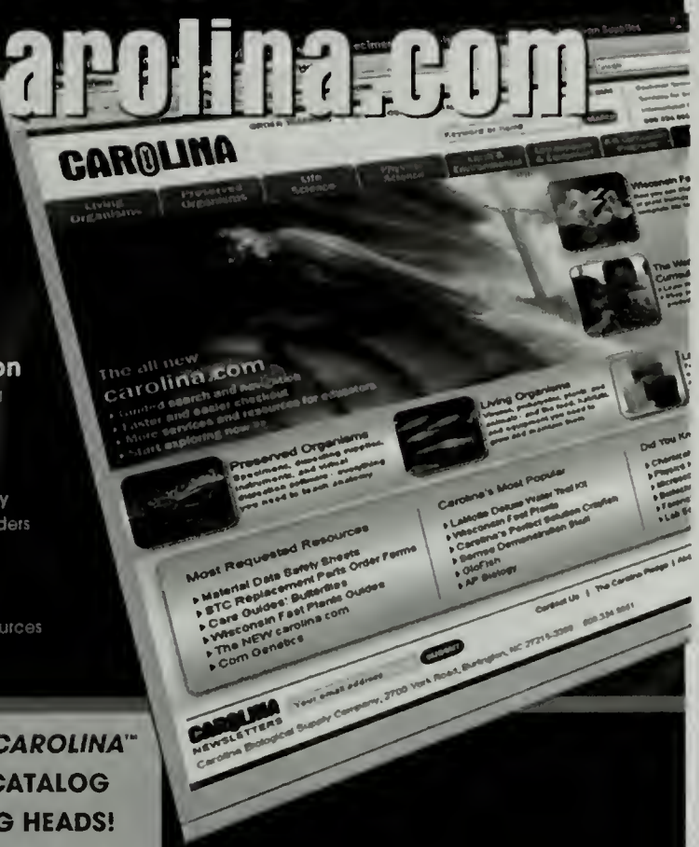


Virtual Biology Labs
14 Modules
30 Simulations
130 Activities
Contact your local sales representative for information.

Visit us online: www.cengage.com/biology for more infomation.

09ELS0507

Point. Click. Discover!
The NEW
www.carolina.com



- **Improved search**
  Faster, more relevant results help you quickly find what you need and save time.
- **Guided navigation**
  Clean, precise navigation helps you efficiently shop online.
- **Detailed product information**
  Updated descriptions and photos help you make informed buying decisions.
- **Simple checkout**
  Fast, simple, secure checkout helps you buy with confidence and accepts purchase orders and tax exemptions.
- **Teacher resources**
  Free activities, lesson plans, and other resources help you keep your curriculum fresh.

THE 2008 *CAROLINA*™ *SCIENCE* CATALOG IS TURNING HEADS!

Carolina's Web site isn't the only fresh face getting attention. The 2008 *Carolina*™ *Science* catalog also has new features, with more choices and information to help you select exactly the right product for you and your students.

Order your copy online today. It's easy!

Visit us online at www.carolina.com/catalog or call 866.815.2450.

Carolina Biological Supply Company
866.815.2450 • www.carolina.com

We listened. Advice from educators like you helped us create a completely new online shopping experience with improved focus on your unique needs. The NEW carolina.com now makes it easier than ever to find and purchase your science supplies. And its refreshed, updated teacher resources round out our commitment to world-class support. We can describe it, but you will have to experience it for yourself!

CAROLINA
World-Class Support for Science & Math

Dedicated to

Problem Solving and Value-Added Solutions

Web Site: http://www.bda-inc.com/home.html

Florida (USA) Office:
BREEDLOVE, DENNIS & ASSOCIATES, INC.
330 W. Canton Ave. Winter Park, Florida 32789
Tel: 407 677-1882 Tel: 800 304-1882 Fax: 407 657-7008

Tennessee (USA) Office:
BREEDLOVE, DENNIS, YOUNG & ASSOCIATES, (TN) INC.
133 Holiday Court Suite 207, Franklin, Tennessee 37067
Tel: 615 599-1996 Fax: 615 599-1998

Copyright: Breedlove, Dennis & Associates, Inc. 2000.

Martin Microscope Company

Since 1946

Microscopes

Digital Imaging

www.martinmicroscope.com

MM Series Digital Camera Adapters

High Definition Video

207 South Pendleton Street / Easley, SC 29640 / 864-242-3424 / Fax 864-859-3332 / sales@martinmicroscope.com

ASSOCIATED MICROSCOPE

Associated Microscope
P.O. Box 1076
Elon, NC 27244
Tel: (800) 476-3893
Fax: (336) 538-1847
E-mail: info@associatedmicroscope.com
Web Site: www.associatedmicroscope.com

PATRON MEMBER OF ASB

Model # 13495211

LEICA Advanced Compound Microscope
The Vision to Create a Unique Instrument!

Model # 10447197

LEICA E SERIES
The Advanced Stereo Zoom Microscope Of The Future...Today!

SALES AND SERVICE OF MICROSCOPES

Leica

LEICA SWIFT MEIJI DIGITAL CAMERAS

Quality Microscopes for Colleges and Universities
Call 1-800-476-3893 to Order!

ASB Membership Form

To join ASB or to renew your membership, please complete the information below and enclose check payable to Association of Southeastern Biologists. Mail to Tim Atkinson, Carolina Biological Supply Company, 2700 York Rd, Burlington NC 27215-3398. If you have any questions, please contact Tim Atkinson at 336 538 6224, FAX 336 538 6322, or e-mail tim.atkinson@carolina.com. Thank you for your support.

We encourage all members to consider a higher level of membership support this year.

Name_____

Organization/Educational Institution _____

Address Line 1_____

Address Line 2_____

Address Line 3_____

City_____State_____Country_____

Zip Code_____-_____ Telephone (_____)_____

Cell Phone (_____)_____ Fax (_____)_____

E-mail_____

Regular -- $35 _____

Regular, 3 years -- $95 _____

Family -- $40 _____

Student -- $15 _____

Emeritus -- $15 _____

Contributing -- $70 _____

Sustaining -- $140 _____

Life -- $350 _____

Patron -- $750 _____

Library -- $40 _____

Library, 3 years -- $100 _____

ASB ENRICHMENT FUND CONTRIBUTION _____

Contributions to ASB, a not-for-profit organization exempt under Internal Revenue Code Section 501(c)(3), are tax deductible. We welcome any inquiries you may have.

If you wish to subscribe to *The Southeastern Naturalist*, please see page 492 for subscription information.

Southeastern biology.
American Museum of Natural History
Received on: 09-30-08

SOUTHEASTERN BIOLOGY
VOLUME 55, NUMBER 4, October, 2008
http://www.asb.appstate.edu/

In This Issue

THE VIEW FROM HERE 397
AIBS REPRESENTATIVE'S REPORT 399
EVENTS OF THE 2008 ANNUAL MEETING 400
2008 MERITORIOUS TEACHING AWARD (UNIVERSITY PROFESSOR) 400
2008 RESEARCH AWARD RECIPIENTS 403
ASB PAST PRESIDENTS AT THE ANNUAL MEETING 420
THE PEMBROKE GROUP AT SPARTANBURG, SC 427
RESOLUTION OF APPRECIATION TO THE MARTIN FAMILY 428
RESOLUTION OF APPRECIATION TO FURMAN AND WOFFORD 429
ADVERTISEMENT FOR BONE CLONES, INC. 430
SYMPOSIUM SUMMARY 431
TREASURER'S REPORT FOR 2007 441
TREASURER'S ENRICHMENT FUND REPORT 442
MEMBERSHIP OFFICER'S REPORT 442
PAST PRESIDENT'S ADDRESS 443
DARWIN BICENTENNIAL 446
ADVERTISEMENT FOR SILVER BIOLOGY 454
ASB STAFF, OFFICERS, AND EXECUTIVE COMMITTEE, 2008-2009 455
ASB REPRESENTATIVES AND COMMITTEES, 2008-2009 456
CALL FOR PAPERS, 70TH ANNUAL MEETING, 2009 462
SPECIAL REMINDERS FROM THE PRINT EDITOR 475
NOMINATION FORM FOR ASB ELECTIONS, 2009 476
ADVERTISEMENT FOR SCIENCE APPROACH 477
SUPPORT AWARDS FOR GRADUATE STUDENTS 478
GUIDELINES FOR POSTER PRESENTATIONS 479
REQUIREMENTS FOR RESEARCH AWARDS 480
ASB MERITORIOUS TEACHING AWARD ANNOUNCEMENT 486
NOMINATION FORM FOR ASB MERITORIOUS TEACHING AWARD 487
ASB ENRICHMENT FUND AWARD ANNOUNCEMENT 487
A LETTER FROM THE TREASURER 488
THE *SOUTHEASTERN NATURALIST* JOURNAL INFORMATION 492
NEWS OF BIOLOGY IN THE SOUTHEAST 494
ATBI AND SAFC INFORMATION 500
OBITUARIES 501
ASB PATRON MEMBERS 508

PATRON MEMBERS

Associated Microscopes, Inc., Elon College and Haw River, NC • Tim Atkinson, Burlington, NC • Breedlove, Dennis and Associates, Inc., Orlando, FL • Carolina Biological Supply Company, Burlington, NC • Martin Microscope Company, Easley, SC • Thomson-Brooks/Cole, Belmont, CA • Marilyn Pendley, Maiden, NC